Dental Digest

May 1949

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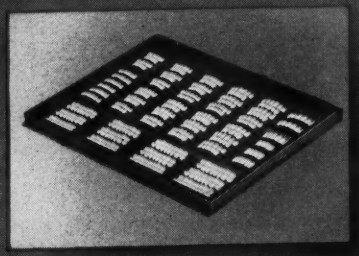

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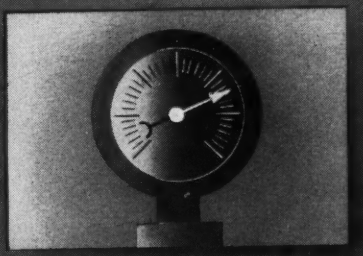

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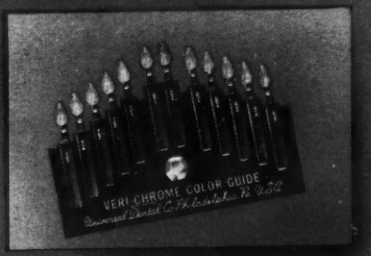

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Vol. 55, No. 5

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May 1949

About Our CONTRIBUTORS

ROBERT A. ATTERBURY, B.S., D.D.S., (University of Illinois, College of Dentistry, 1942) is an oral surgeon who is a frequent contributor to dental literature on various aspects of his special field. In his current article Doctor Atterbury describes a painless way of removing sutures after oral operations.

HOWARD E. KESSLER, D.D.S., (Western Reserve University, School of Dentistry, 1945) is a member of International Anesthesia Research Society and has published extensively on the subject of anesthesia and speech pathology. Doctor Kessler is undertaking a study of the relation of malocclusion to defective speech in collaboration with Mrs. Amy Bishop Chapin, assistant chief of hearing and speech therapy at the Cleveland Hearing and Speech Center; and Doctor Thomas J. Hill, Professor of Clinical Oral Pathology at Western Reserve University School of Dentistry.

A. H. TAMARIN, D.D.S., (Chicago College of Dental Surgery, Loyola University, 1917) has published frequently in DIGEST and elsewhere on different aspects of his specialty, crown and bridge construction in which he has been doing research for many years. In his current article, SIMPLIFIED CONSTRUCTION OF AN ANATOMIC CAST GOLD CROWN, Doctor Tamarin presents a clear-cut, step-by-step method for casting a gold crown that will be an exact replica of the original tooth.

JACK F. CATHCART, D.D.S., (University of California, College of Dentistry, 1926) specializes in prosthetics. In his article, IMMEDIATE ANTERIOR ACRYLIC BRIDGEWORK BY THE DIRECT-INDIRECT TECHNIQUE, Doctor Cathcart gives explicit directions for carrying out an immediate restoration that is greatly appreciated by the patient and time saving for the dentist.

LEO S. SEIDNER, D.D.S., (Chicago College of Dental Surgery, 1920) first published in DENTAL DIGEST in 1932 and is well known to its readers. Doctor Seidner became aware many years ago of the possibility of a connection between nervous tension and certain forms of mouth pathology. He presents some of the results of his observations, including an illustrated case history, in his paper, ORAL MANIFESTATIONS IN EMOTIONAL DISORDERS, which appears in the current issue.

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SUTURE REMOVAL

Following Oral Surgery

ROBERT A. ATTERBURY, B.S., D.D.S., Oak Park, Illinois

DIGEST

It is probable that the apprehension and dread felt by many patients before suture removal originated in some previous experience of this kind. In early days untreated silk, linen, and cotton thread were used as suture material. During the process of healing tissue cells grew into and permeated the interstices of these threads. Removal of these materials disrupted newly-formed tissue and was therefore painful.

Nowadays the removal of sutures should be a relatively painless process because of the impervious materials available. If there is discomfort, complaint should be directed toward the operator for an accident or faulty technique. If the patient remains motionless and the operator is dexterous and follows a standard technique there is no excuse for causing pain, damage to the wound, or infecting the suture bed.

A Simple Technique

The technique of suture removal is simple and can readily be understood from a brief examination of the accompanying illustrations. Ordinarily only two instruments are needed, (1) a cross-ribbed dissecting forceps, and (2) a pair of sharp-pointed scissors. (Some operators prefer combination suture-cutting scissors. The writer prefers ordinary long, tapering scissors with two sharp-pointed ends.)

When to Remove Sutures—1. If the skin wound is small, edges in easy and normal apposition without tension, and the sutures doing little mechanical work in holding they may be removed on the third or fourth day. On the face, in particular, where scarring is to be minimized skin-sutures can and often should be removed on the third or fourth day.

2. If the wound lips are under tension and the sutures are mechanically holding the tissue in contact, they may be left in situ for two or three days more.

3. An alternative is to remove alternate approximating sutures up to the seventh day and then remove the remaining ones a day or two later.

4. Skin sutures are rarely left in beyond the tenth day. In general, sutures of average aseptic wounds are usually removed on or about the seventh day.

5. Sutures of average uncomplicated intraoral wounds are usually removed between the fourth and sixth day. Alternate sutures may be removed on the fourth day and the remainder on the sixth day.

Method of Removing Interrupted Sutures—1. Before removal the suture line should be swabbed with antiseptic solution.

2. Gently grasp the extracutaneous part of the suture just beyond the knot with a smooth forceps.

3. At right angles to the tissue surface lift directly upward with a rotary motion just far enough to expose the subcutaneous part of the suture.

4. Now the sharp pointed end of the scissors, held flat, is slipped beneath and made to embrace the subcutaneous part of the suture which is severed transversely.

5. The suture should not be cut in the middle as this would necessitate drawing a potentially contaminated piece of suture through the wound. If the wound itself is sterile, the subcutaneous length of the suture is certainly sterile.

6. Now it only remains to draw the suture *toward* the wound (not even vertically upward, and certainly not outward which would actually tend to separate the lips of a weakly united wound.)

Comments—(1) The withdrawal should be steady and gentle until the entire suture is removed. (2) The scissors may assist in counterpressure during withdrawal by gently pressing the tissue on each side of the remaining extracutaneous portion of the suture. (3) This same technique is repeated with each individual suture.

Treatment After Removal—Following removal suture holes act both as exit drains for any fluid in the wound (this should be rare at this period) and at the same time act as an entrance to bacteria. It is good practice, therefore, to treat the wound again with some kind of antiseptic after all sutures have been removed.

Second Method

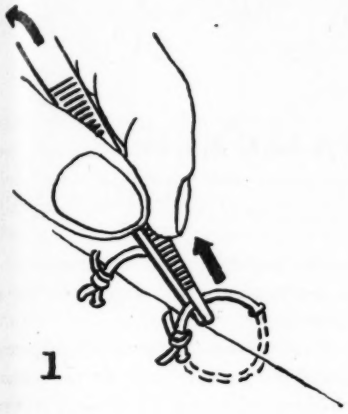
Although not as much favored, the following is possibly a more expeditious way of removing interrupted sutures: 1. Grasp the exact middle of the suture with a forceps, drawing equally upon the two portions of the buried suture.

2. By slight tension on the loop, bring into view a little of the moist, concealed part of each subcutaneous suture.

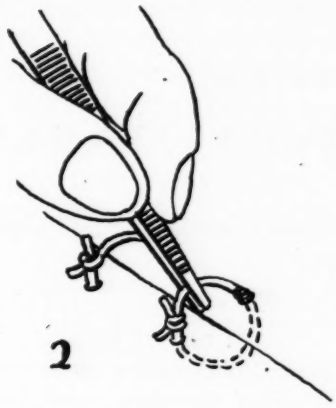
3. Using a pair of sharply-pointed scissors with the blades separated to depress the tissue on one side of the suture, cut the moist buried part. The maintained tension on the free end will bring the opposite end up and draw out the entire length of the buried portion of the suture.

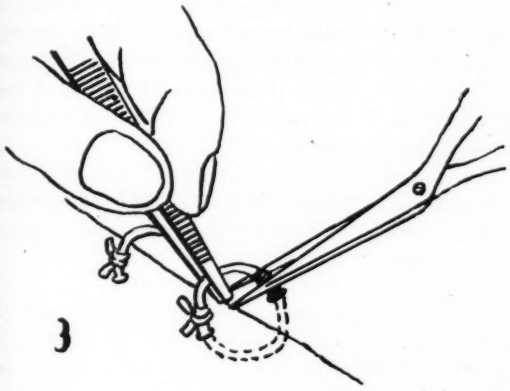
In neither of these techniques is any part of the suture lying outside the tissue drawn backward through the deeper parts bringing with it incrustations and possible infection.

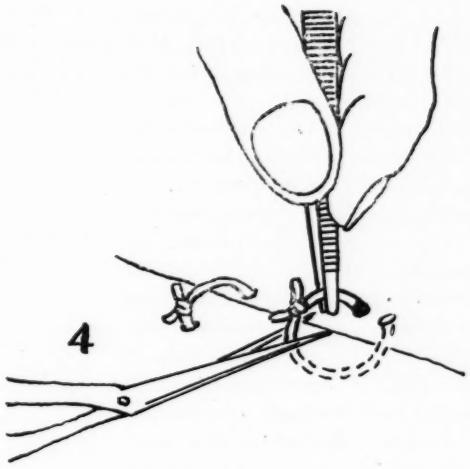
1011 *Lake Street.*

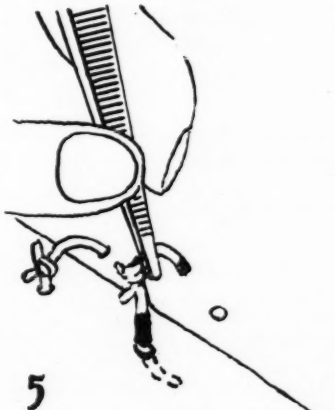


1. *Forceps grasp the extracutaneous part of the suture.*
2. *Gentle traction is applied only to buried portion.*









3. *Simultaneously the separated scissors points embrace the suture and slightly depress the tissue to expose a very short extent of the most subcutaneous part of the suture without dragging the extracutaneous part of the opposite side under the tissue. The suture is clipped close to the tissue.*

4. *Embracing the opposite part of the unremoved suture at its emergence from the tissue the separated scissors points serve only to steady the tissue.*
5. *The submerged part of the suture is removed with the forceps which still grasp the remaining extracutaneous portion.*

The Use of the PALATAMETER *and the* OCCLUSAMETER

HOWARD E. KESSLER, D.D.S., Cleveland

DIGEST

Although both speech literature and dental literature refer frequently to the specific speech defects that result from definite types of malocclusion, it is well-known that in a great many cases severe malocclusion is accompanied by no speech defect. Malocclusion cannot always be entirely compensated by tongue placements. It has not been determined how severe the malocclusion must be to prevent any compensation or if it depends on the type of malocclusion whether compensation can be obtained naturally by the tongue and facial musculature or whether compensation must be taught by a speech therapist. A description of the studies and methods undertaken to discover the extent that malocclusion plays in speech difficulties is outlined in this article.

Method

The plan of study included the following steps: 1. To take a record of the mouth measurements in exact millimeters.

2. To list on the same record sheet the specific defective sounds.

3. To balance quickly the measured severity of the bite with the exact defective sounds. This was made possible by the above records.

4. To continue the study until from 500 to 1,000 children in the Cleveland Public School system had been recorded.

5. To ascertain definitely the exact extent malocclusion plays in speech difficulties. It was expected that this would be obtained from the statistics gathered.

Significant Measurements — The mouth measurements required are (1) the width of the palate at the point of the six-year molar, (2) the height of the palate at the same point, and (3) the amount of overjet or protrusion of the arches. (Sometimes described as the amount of "class twoness" or "class threeness").

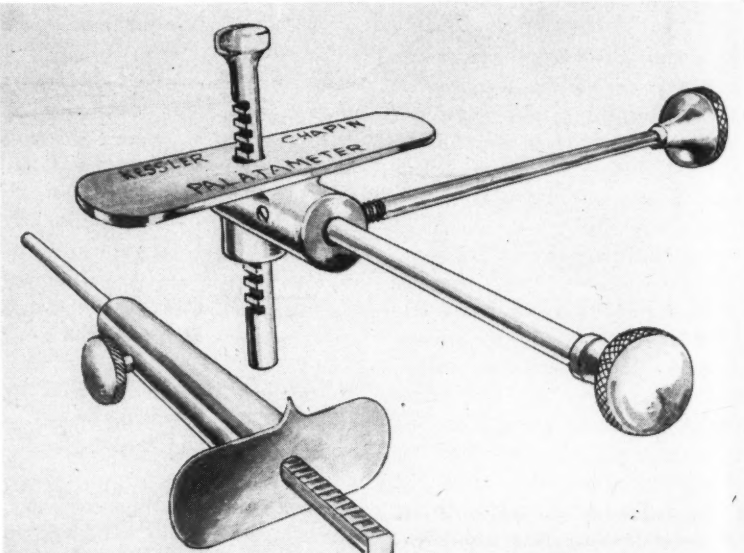
Simplicity and Speed Desirable— The method of taking a lateral skull x-ray with a piece of lead foil at the roof of the palate and then measuring the plate distance from the occlusal surface of the upper six-year molars to the lead foil point was considered impractical and too expensive for a large study.

The Purpose—In order to measure and record thirty or forty school children in a single morning it was decided to devise an instrument of relative simplicity which could be sterilized rapidly.

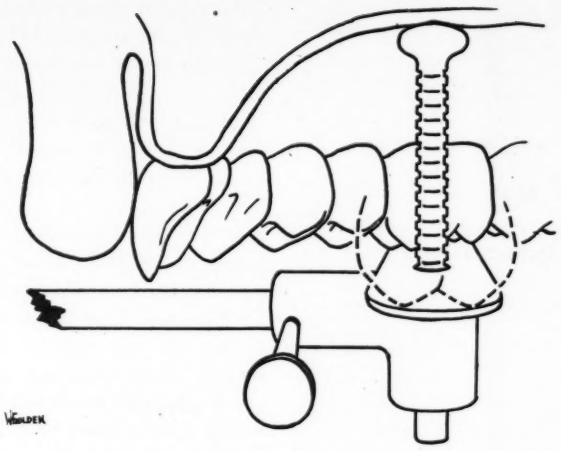
1. *The Palatameter*—The palatameter was designed to measure in millimeters the height of the palate.

2. *The Occlusameter*—For measuring the amount of overjet or protrusion of the arches the occlusameter was designed.

3. *Calipers*—The width of the palate at the gingival line of the upper first molars is measured with spread calipers.



1. ***The palatameter.***



2. ***The palatameter in place in the mouth. Note that the top of the jack screw is touching the top of the palate and the instrument is ready to be removed from the mouth for a reading.***

Use of the Palatameter

1. In using the palatameter (Fig. 1) the horizontal plate rests on the occlusal surface of the upper six-year molars and is held there during measurement.

2. The top jack screw is calibrated in millimeters.

3. The front crank knob is turned until the top of the jack screw touches the roof of the palate.

4. The set screw on the side is then tightened so that the millimeter reading on the jack screw can be read after the instrument has been removed from the mouth.

5. As the stability of the instrument should not be disturbed when being tightened, the set screw has a long shank.

Use of the Occlusameter

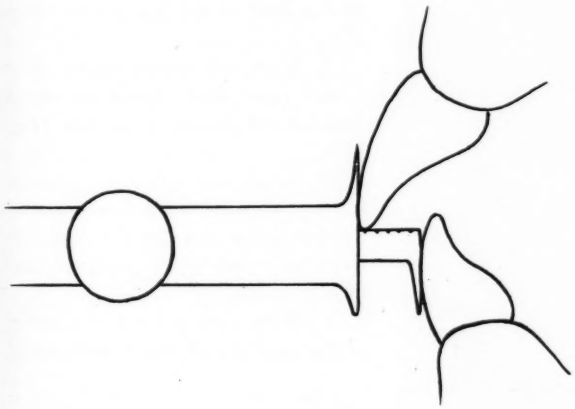
1. The front shield of the occlusameter (containing a point for the midline) rests on the anterior surface of the forward arch.

2. The sliding bar has a shoe which touches the anterior surface of the innermost arch.

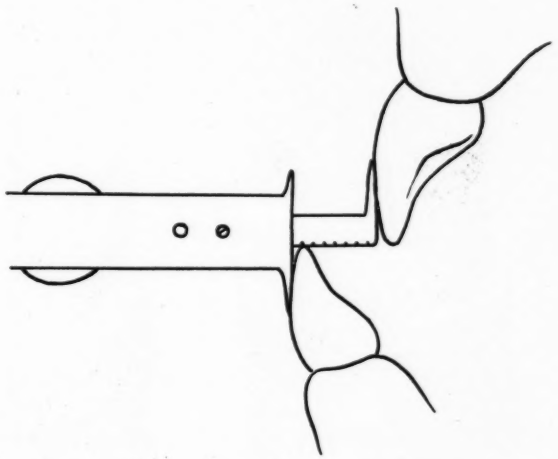
3. The sliding bar is calibrated in millimeters.

4. The set screw on the side must be tightened before the instrument is removed from the mouth for reading.

The Park Building, Public Square.



3. ***The occlusameter in place on a class-two bite and ready for a reading.***



4. ***The occlusameter in place on a class-three bite and ready for a reading.***

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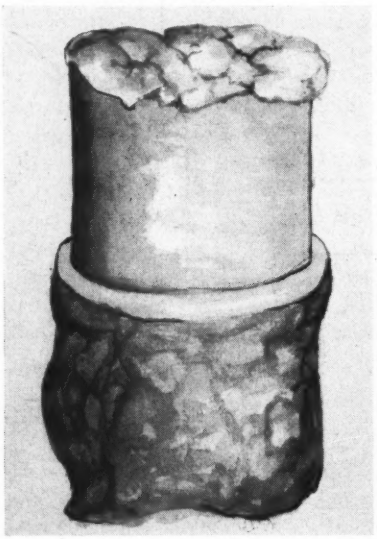
Simplified Construction of an ANATOMIC *Cast Gold Crown*

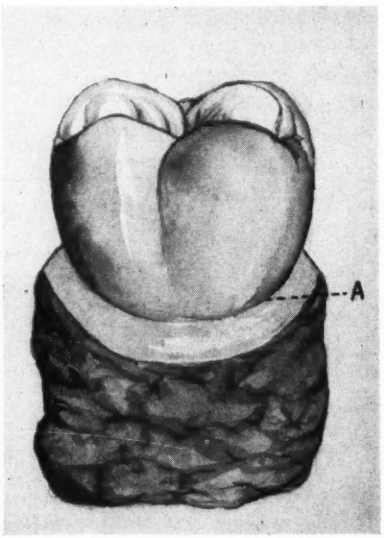
A. H. TAMARIN, D.D.S., Chicago

DIGEST

The simplicity in making and casting by the method described herein eliminates many of the difficulties which accompany the construction of an all gold crown. A replica of the original tooth form is also insured.



1. *Model of tooth in a colloidal impression.*



2. *Corrected model of tooth involved.*

1. Take a colloidal impression of the tooth involved. Do not prepare or grind the tooth anywhere except at the distal and mesial surfaces.

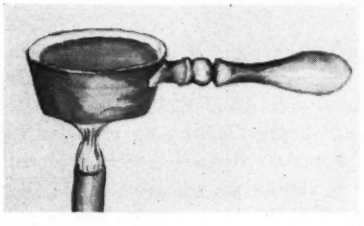
2. Run up a stone model of the tooth involved (Fig. 1).

3. Restore the carious and broken down parts of the model, bringing it to the normal appearance of the original tooth (Fig 2).

4. Elongate the crown of the model about 1 millimeter at the gingival margin (Fig. 3).

5. Place the stone model in a dish of water and allow it to become saturated.

6. In a metal container (Fig. 3) melt some hard baseplate wax.



3. *Dish with molten wax.*

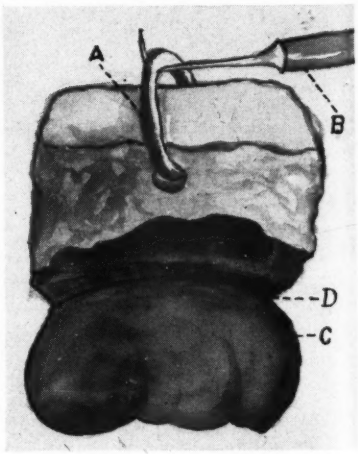
7. Through the base of the stone model make a small hole. Pull a thin brass wire through this and form into an oval ring (Fig. 4A).

8. With a right angle explorer (Fig. 4B) grasp the brass ring and immerse the wet model in the molten wax up to and including the gingival margin for 1 or 2 seconds. Remove, and chill in a dish of cold water. This process will form a wax crown of uniform thickness all over the stone model. The wax crown will not stick to the wall of the wet model (Fig. 4C).

9. With the sharp point of a broken razor blade cut off the excess wax around the marginal line (Fig. 4D).

10. Attach wax sprues to the occlusal, buccal, and lingual surfaces of the wax crown, merging them into one common sprue at the occlusal surface (Fig. 5A).

11. Make a sharp cut on the center of the mesial and distal surfaces of



4. *Model after emerging from a wax bath.*

the wax crown. These cuts running parallel to the long axis of the tooth will split the crown at the gingival margin (Fig. 5B).

12. With your finger tips take hold of the wax sprues (Fig. 5C) and remove the wax crown from the stone model.

13. The split parts of the wax crown will expand during its removal from the model (Fig. 6A) allowing the buccal and lingual wings of the wax crown to pass over the convex surfaces of the stone model without having its own convex walls distorted (Fig. 6B).

14. With your fingers force the buccal and the lingual wings of the wax crown together until the surfaces of the mesial and distal cuts meet (Fig. 7A).

15. Fill the inside of the wax crown with investment compound and let it crystallize (Fig. 8A).

16. With a little molten wax carried at the point of a hot wax spatula pass over the cuts of the wax crown at the mesial and distal surfaces. This will unite the split surfaces and wax scars will be formed at the same place where the cuts were (Fig. 8B).

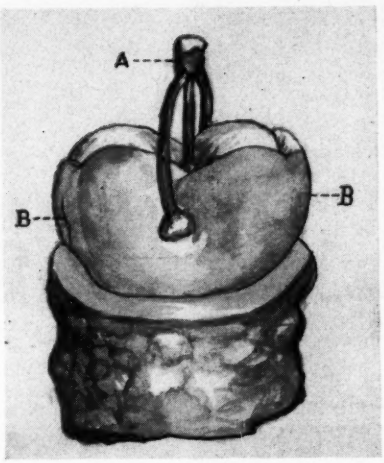
17. With a sharp knife shave off the wax scars and add two more wax sprues. These sprues should be attached to the center of the mesial and distal surfaces and terminate in the common sprue (Fig. 8C).

18. Mount the wax crown, invest, and cast.

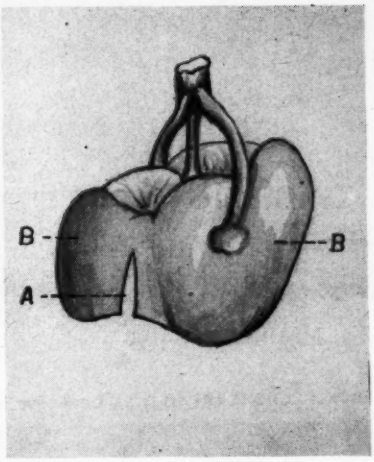
19. After casting remove the sprues and polish.

20. Reinforce the cusps with 615 gold solder.

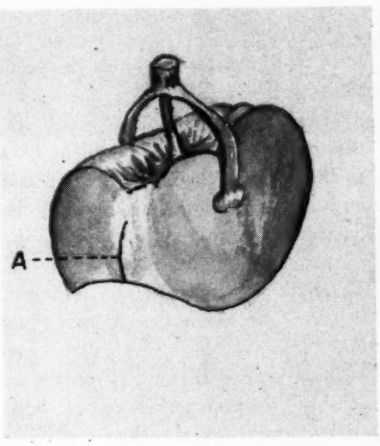
21. Grind off the convexity of the walls of the original tooth.



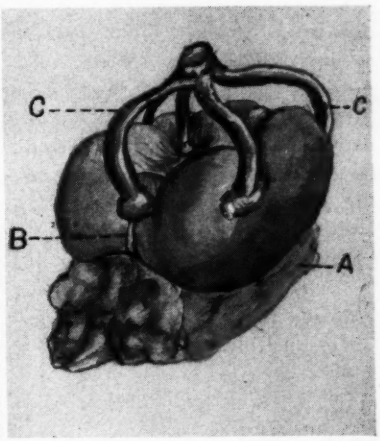
5. ***Wax crown with buccal, lingual, and occlusal sprues; showing also the longitudinal cut on one of the proximal surfaces.***



6. ***Wax crown with split and dilated wings.***



7. ***Wax crown with buccal and lingual wings brought together.***



8. ***Wax crown with all the sprues ready to be invested.***

22. The cast gold crown will fit perfectly over the tooth and under the free margin of the gum. It will also bear the resemblance of the original tooth.

3460 *Lawrence Avenue*

Immediate ANTERIOR ACRYLIC BRIDGE

by the Direct-Indirect Technique

JACK F. CATHCART, D.D.S., Berkeley, California

DIGEST

The loss of one or more anterior teeth is a severe shock to the patient. The assurance that immediate restoration is possible is greatly appreciated. An immediate bridge can easily be made in a one-day appointment with plenty of time left to take care of other patients if the dentist will use the direct-indirect technique. In this technique the patient is the principal model for wax-up and try-in stages. The indirect technique is used only as an aid in forming the copings and a preliminary wax-up for the direct restorations in the mouth.

Procedure

1. Make a careful survey to determine the type of bridge to be made.
2. Perform extraction under local anesthesia.
3. Prepare the abutments under the same anesthesia.
4. Make cement dies from impressions taken of the abutments and wax up copings on these dies.
5. Transfer the copings to the abutment teeth and wax up the pontic bars in the mouth.

(A 14-gauge, one-half round ready wax shape with a cross bar in the center of each pontic tooth has been used successfully.)

Clearance Easily Ascertained—By this direct wax-up of abutment bars to the copings the amount of incisal and lingual clearance can easily be determined and the placement of the bars too far labially can be overcome. The bars should be placed as nearly in the center of the bridge pontics as possible.

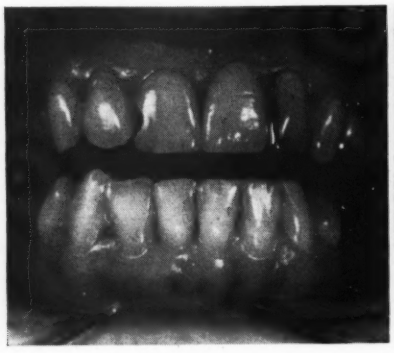
Time Saved—By multiple sprueing, joining the sprues together with sticky wax, and then chilling thoroughly, the whole waxed-up assembly of copings and bars can be removed from the mouth. It should now be invested and cast in one piece. This saves the time needed to solder bars and gives a much stronger framework.

Casting

The casting is made with a hard gold which is cleaned and placed in the mouth. If this casting has been properly made by the controlled expansion technique it will go exactly to place.

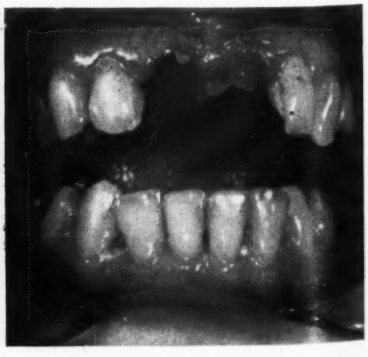
The following steps should now be taken: 1. Check the occlusion and thin any spots that are too full for proper placement of the acrylic.

2. Take a colloid impression of the casting in position in the mouth.
3. Remove the casting from the mouth and place it in the impression.
4. After the inner portions of the copings are oiled, make a stone model. This indirect model is of great aid in the preliminary waxing of the pontics and abutments.
5. Place a coating of red sticky wax at least 1 millimeter thick over the bars and the copings. (This red sticky wax has a twofold purpose: (a) It gives strength to the subsequent blue wax used in carving the bridge, and (b) if the blue wax is cut through into the red wax the acrylic will be too thin and the gold will show through the acrylic and spoil the esthetics.)



1. *Case as presented.*

2. *Old bridge removed.*



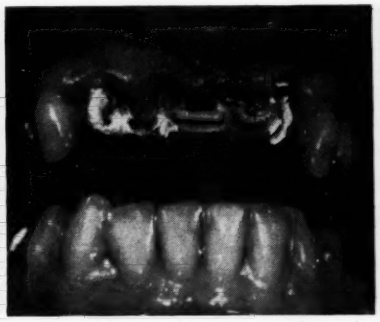
3. *Abscessed incisor extracted.*

4. *Laterals prepared for full crowns as abutments.*

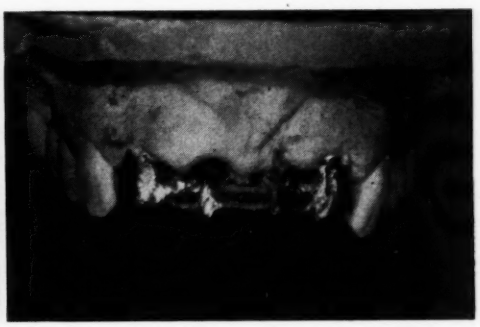
5. *Wax-up for copings. Wax-up started on cement dies then transferred to abutments.*

6. *Wax-up of pontic bars to copings in the mouth.*

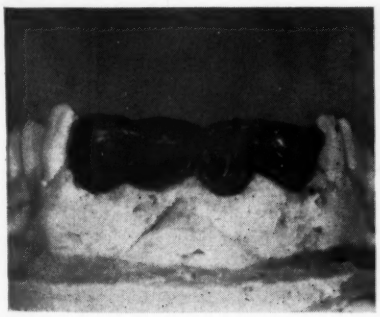
7. *One-piece casting of copings and bars showing positions of sprues.*



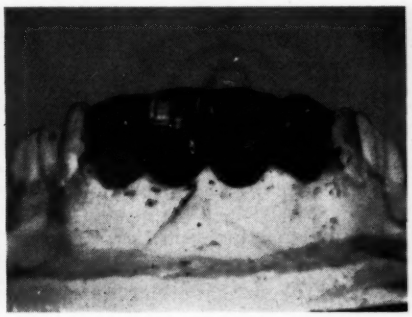
8. *Coping and bar framework in the mouth.*



9. *Stone model from colloid impression with framework.*



10. *Basic wax-up in red sticky wax.*



11. *Finished wax-up on model in blue inlay wax.*

12. *Try in mouth. Correct occlusion, contacts, anatomy, and incisal length.*

6. Over the red sticky wax make the desired bridge form on the model in blue casting wax. (The approximate shape of the finished bridge is carved in this blue wax. Blue wax is used because it gives a better contrast than ivory or white wax and the details will stand out more clearly.)

7. Now take the waxed-up bridge from the stone model and place in position on the abutment teeth in the mouth.

True Lingual Shape Formed by Patient

1. Soften the lingual surface of the blue wax.

2. Have the patient go through the occlusal motions. In this way the true lingual shape and incisal length are formed. A much more accurately functioning bridge is obtained.

3. Complete the final details of anatomy while the waxed-up bridge is in position in the mouth.

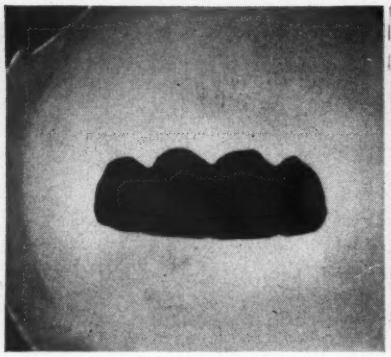
Final Steps

1. Remove the waxed-up bridge from the mouth.

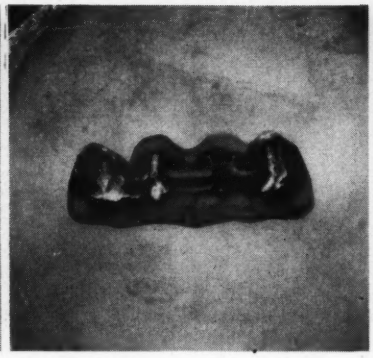
2. Process in the desired shade of acrylic, allowing one hour for cooking, thirty minutes at 160° F. and thirty minutes of boiling.

3. After the bridge is processed it should be unflasked and cleaned.

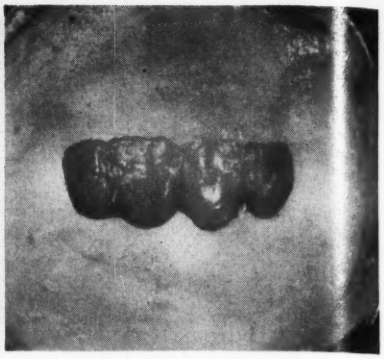
4. Place bridge in mouth. Check occlusion and correct details.



13. *Bridge invested for processing.*



14. *Wax boiled out ready for placement of acrylic.*



15. *Acrylic pressed to position.*

16a. *Finished bridge cemented to place. Picture taken same day as extraction.*

16b. *Finished bridge in closed position.*

5. The bridge should now be removed, polished, and cemented to place.

Conclusions

1. The total processing time of investing and cooking should be about two and one-half hours. During most of this time the dentist can take care of other patients.

2. The total working time from start to finish should approximate seven hours.

3. The gratitude of the patient for this immediate type of dentistry is well worth the time and energy spent.

4. Patients will be referred to the dentist who is willing to give this type of service which is very profitable on that account.

701 *American Trust Building.*

Oral Manifestations in EMOTIONAL DISORDERS

LEO S. SEIDNER, D.D.S., Chicago

DIGEST

After fifteen years of intensive observation the author of this article is firmly convinced that in contradiction to the older concept that all pathologic lesions are bacteriogenic in origin, there is a definite connection between psychologic states and some oral pathologic manifestations. A case history with series of roentgenograms is presented.

AN EXPERIENCE that occurred a few months prior to the publication of a paper[1] on psychosomatics illustrates the one-track quality of our thinking and our slavish adherence to established practice in matters of dentistry and dental pathology.

Incident—A group seated around a luncheon table were discussing various phases of dental practice. Caries, erosions, and periodontal diseases came up for consideration and the author mentioned emotional disturbances as a possible causal factor.

One of the group who is an excellent technician, rose from his seat with great impatience and in utter disgust exclaimed that he could no longer listen to such nonsense and unceremoniously left the table. The other two, evidently remaining out of courtesy, kept silent but failed to conceal their inner satisfaction with the outcome of the discussion.

New Concepts Resisted—Most of us are too busy grinding away at teeth to give thought to the fact that dental organs are part of the whole system and influenced by mental processes not unlike the influences exerted by the mind over other organs of the system.

Indifference General—That this is not an isolated case of resistance to newer concepts in dental thinking is illustrated by the account of a former chairman of a clinic committee of a large dental society. He tried to introduce an essayist who proposed to read a paper on the subject of psychosomatics as it applied in dental practice. His efforts were rejected by the committee members on the ground that such a program would be extremely unpopular and draw but a small crowd.

It is not surprising to hear the lay public express itself in a way to indicate a belief that the teeth and tissues of the mouth are separate from the whole of the system. Even the intelligent laymen should know better; but what is shocking is the fact that the majority of dental thinking and performing is not much different from that of the laity. Files of hundreds of x-ray films could be presented showing total disregard of basic biologic principles in average dental practice.

Effect on the Patient—Disregarding for the moment the physiologic effect on the patient of this kind of dental service, the psychologic effect is certainly not conducive to mental health.

Purpose

The purpose here is to present evidences supporting the soundness of the psychosomatic concept in dental practice based on empirical tests. The philosophy, the mechanics, and the theoretical explanations of the phenomenal manifestations must be left to abler and more qualified students and writers. So far as the philosophy or psychosomatics as it is applied in dentistry is concerned, it is difficult to point to a better presentation than Ryan's paper mentioned above, and his book.[2]

Until these studies appeared in print, dental literature was notably silent on the subject. It is gratifying to observe that since then the principle of psychosomatics as it applies to dental practice has gained wider attention. What is of foremost significance, however, is that the favorable interest aroused by this work is greater in medical circles than it is in the dental profession. The group that is now giving expression to the subject is comprised of clinicians, men who have apparently found themselves in the same odd predicament as the author found himself until now.

Opportunities—The dental profession has an opportunity to serve humanity that in some aspects is denied even the medical profession. It should be realized that the dental chair constitutes a psychologic observatory. Contact with patients extending over long periods of time offers a vantage point of inestimable value in the study of human behavior as this behavior affects professional efforts.

Dentists are too often absorbed in the mechanical restoration of teeth to give thought to basic causes. Sight is lost of the person, of which the teeth are merely a part of the whole system. Most dentists are so occupied with this narrowly specialized service that

[1]Ryan, Edward J.: *The Principles of Psychosomatic Medicine in Dental Practice*, Harvard Dental Alumni Bulletin, November, 1945.

[2]Ryan, Edward J.: Psychobiologic Foundations in Dentistry, ed. 1, Springfield, Ill., Charles C Thomas, 1946.

as a class their place in the profession of the healing art is questioned, or regarded dubiously. Too few of us compare our own clinical observations with concepts or techniques offered by others who frequently have no clinical contacts with the patients or their ailments.

Prejudice—Preferences are shown to be sure; but not to basic theories which have become established practice through years of application. The preferences we do exercise are founded on blind personal prejudices rather than on previous successes or failures. For instance, all periodontal diseases involving either the soft tissues alone, or those involving both hard and soft tissues around the teeth are accepted to be infectious processes caused primarily by the invasion of pathogenic organisms. Any opinion to the contrary is regarded as occult and unscientific.

Mass orthodox thinking and clinical procedure often border on the ludicrous, tending to defeat even the very theory upon which practice is based. Far too frequently current dental literature calls attention to so-called scientific articles in which photographic illustrations are used to show acute conditions of periodontitis with the usual characteristics of congested and hypertrophied gingival tissue. What is most conspicuous about those illustrations (aside from the obvious morbidity) is what every practical clinician would first be concerned with; namely, the enormous amounts of encrustation of all the teeth involved, with layers of deposits that stand out more conspicuously than the pathology with which the authors are so much concerned.

Innumerable empirical tests made over a period of years have proved that immediate removal of these encrustations from around and beyond the cervical areas of the teeth, thus removing the primary irritating factor, causes the swelling to subside, reestablishes free circulation, and soon restores tissue tone. Within a relatively short time the condition resolves itself without the aid of pharmaceutical agents, provided of course that the teeth have been freed from traumatic occlusion, irritating restorations, and other factors in periodontal therapy so often overlooked.

Psychosomatic Factors

In the above paragraphs an attempt has been made to present the problem of diagnosis and treatment from a practical, down to earth, clinicians' point of view, based entirely on extensive empirical observation and tests that have proved successful in the treatment of periodontal disease.

The intention was to offer contradictory evidence to the theory of bacteriogenesis in certain cases of periodontia which, practically, suggest physical irritants as primary causal factors. Thus, the clinician who is aware cannot reconcile the rigid concept of bacteriogenesis with his own empirical observations that indicate (a) primary conditions permitting the habitat in the pathologic picture of the microorganisms believed to have caused the disease but (b) if denied such habitat would thereby have prevented colonization of pathogenic organisms considered the cause of the disease.

Clinical Proof—Common logic denies the theory that the presence of known pathogenic organisms in a lesion obviously traumatized by some physical or mechanical object constitute prima-facie evidence that these organisms were primarily the *cause* of the lesions. Such a conclusion can be refuted by the practical procedure of removing the traumatizing agents. More often than not the infection then resolves itself without the aid of, or interference with chemo-therapeutic agents.

Some of the more practical clinicians in dental practice have made full use of this simple, undramatic, and unspectacular principle in the treatment of this too common disorder involving tissues of the oral cavity. The majority, however, following the leadership of orthodox teaching armed with swabs saturated with various chemical remedies that often differ from each other only by name, by their compounders, or by the ease and economy of their use.

Often, however, we are confronted by purulent periodontal conditions involving the hard and soft tissues about the teeth which do not lend themselves so readily to diagnosis on the basis of physical trauma alone. The observant clinician often is faced with the questions (1) why many patients present themselves with teeth encrusted with layers of deposits accumulated over a period of years show no presence of pathology of any consequence, (2) why others under the same circumstances show extensive soft tissue and bone destruction, (3) why similar clinical findings seen in cases where poorly constructed dental resorations that have been present for many years with apparently no deleterious effects suddenly induce acute inflammatory flare-up with serious consequences to the tissues and dental organs involved, and (4) why other patients show extensive pathology as the result of mild traumatic agents such as poorly constructed and ill fitting restorations.

Systemic Disorders Ruled Out—The case dealt with here is one in which competent medical examination revealed no systemic disorders as possible causal factors.

Multiple clinical observations have shown that the presence of mechanical tissue irritants often constitute a condition equivalent to what Dr. Flanders Dunbar[3] refers to as "delayed action mines." It has been noted repeatedly and with interest that while many patients continue for years with traumatogenic dental restorations and unhygienic oral conditions with no apparent deleterious effects, should the emotional balance of the patient become upset, the hitherto unaffected traumatized areas undergo a morbid change with manifestations of extensive pathology.

Conclusions—1. When neither the elimination of physical factors nor treatment by orthodox methods will bring about permanent relief it seems evident that emotional disturbances act as detonating factors in these potential danger areas with the explosive results of pathology.

2. It has been noted that once a pathway between a point of susceptibility and emotional activating force has been established the area affected

[3]Dunbar, Flanders: Emotions and Bodily Changes, ed. 2, New York, Columbia University Press, 1938.

1. ***Full mouth x-ray, 1937. Shows loss of investing bone, loss of contacts, and pronounced separation of the teeth.***

remains subject to recurrent attacks.

3. Tissue flare-ups brought about by an emotional disturbance are repeated.

Case History

An outstanding case of extensive oral pathology with definite psychosomatic implications dates back to the year 1937. It was successfully followed through by roentgenographic illustrations at the time of the onset of the disease and continued to the date of complete recovery.

Symptoms—Miss M, aged 19, complained of, (1) sore and bleeding gums, and (2) a feeling of numbness on the right side of the face extending upwards toward the parietal and frontal regions.

Clinical Examination—1. Hypertrophied and highly inflamed gum tissue throughout the entire mouth was revealed by examination, particularly around the lower and upper anterior teeth. 2. The gums bled readily upon touch. 3. The teeth had drifted out of normal contact and alinement and as a consequence were in traumatogenic occlusion. 4. Some serumal and salivary calculus were present about all the teeth but not of sufficient quantity to be considered important as an immediate causal factor. 5. The physical consistency of the saliva was thick and highly viscous and the teeth were coated with a film of soft food material.

(The viscosity of the saliva is an index of the emotional status. The higher the viscosity of the saliva, that is, the thicker, the greater emotional imbalance of the patient.)

Patient's Testimony—Up to the onset of the acute inflammatory condition the patient said that she brushed her teeth regularly twice daily but could not do so lately because the gums were sore and bled profusely at the slightest attempt to brush the teeth. This alarmed her and she refrained from using the tooth brush. When she became aware of the numbness of the face she was extremely frightened and confided her alarm to her parents.

Suspecting that a possible dietary deficiency was the cause of this acute flare-up, the patient was questioned closely and asked to give a detailed account of her daily intake of the various foods considered essential to maintain somatic health. This she did. Her testimony, corroborated by her mother, seemed to rule out a dietary deficiency as a causal factor.

Diagnostic Considerations—1. The patient was neat and meticulously clean. Outward appearance indicated that neither diet nor lack of personal or oral hygiene was of primary importance from a diagnostic standpoint.

2. The patient was conspicuously tense and extremely nervous. This of course would be understandable under ordinary circumstances of a patient in the dental chair. No treatment was administered at this visit until a full mouth x-ray could be obtained.

3. The patient was advised to visit her family physician for a complete physical evaluation. The physician reported no systemic envolvement.

4. X-ray examination revealed enormous interdental papillary and investing bone tissue destruction seldom seen in a patient of this age.

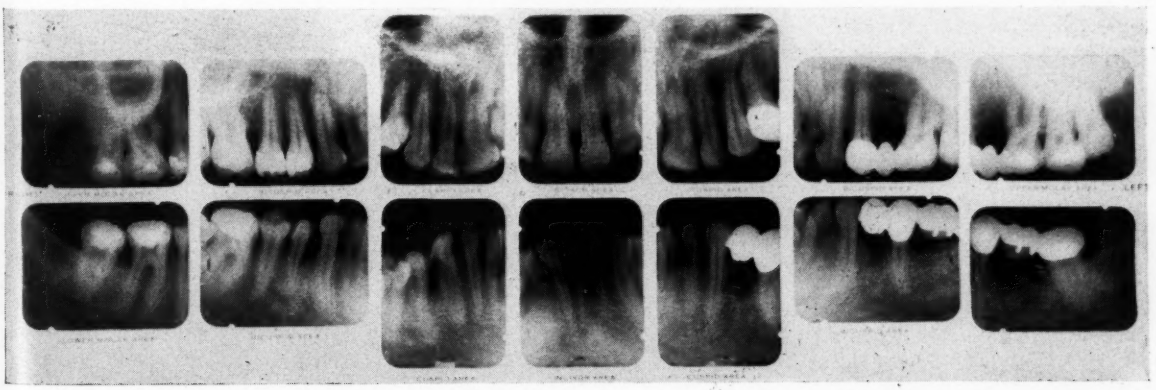
5. In view of the absence of sufficient evidence to justify a diagnosis on the basis of (1) physical trauma, (2) dietary deficiency, or (3) lack of hygiene, attention was centered on causes deeper than visible evidence or that revealed by the microscope.

Psychologic Factors—Although this patient had never been under the author's care previously, enough of the family background was known to suggest a possible emotional source as a casual factor in setting off this acute pathologic condition. The patient, it was found, was extremely sensitive to any direct approach effecting her personal life. Caution was therefore decided upon as the keynote to procedure.

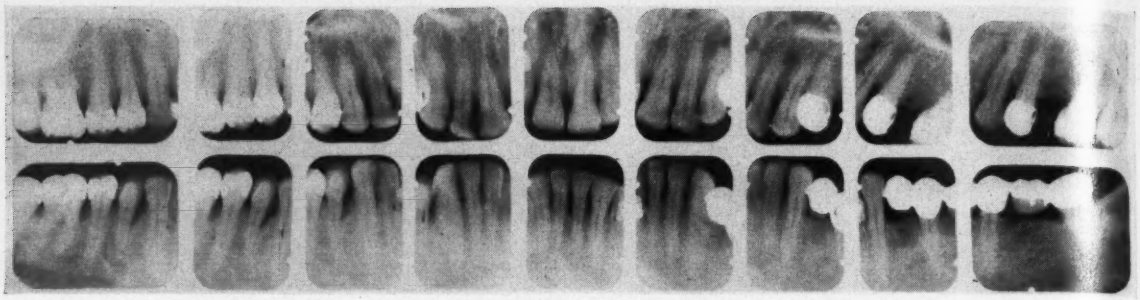
Clinical Treatment—1. The teeth were scaled thoroughly and were ground to relieve traumatic occlusion.

2. No pharmaceutical agents were employed.

3. At each sitting the patient was engaged in general conversation in order to establish a closer interpersonal relationship



2. ***1939. Following restorative dentistry and the stabilization of the emotional situation there is evidence of slight improvement in the investing tissues, with signs of bone regeneration, notably in the lower anterior area.***



out of which it was hoped could be obtained a closer view of what was behind the iron curtain of the mental make-up of the patient.

4. As time went on there was unmistakable evidence of the patient's growing confidence and less reluctance to "open up" and confide the things that seemed to trouble her.

Psychologic Approach—As if suspecting that what was innermost in her mind was an open book to her observer the patient frequently inquired guardedly what we thought caused this condition and would she have to lose her teeth or part of them. The time was considered propitious to approach the case directly from a psychosomatic standpoint which it was felt certain formed the basis for this unusual manifestation of oral pathology in such a young patient.

1. She was asked if it were not true that there were things that bothered her mentally but which she kept suppressed so that she was constantly under high tension. The patient asked what this had to do with her teeth.

2. It was explained that emotional disturbances are often interrelated with manifestations of disease that may occur anywhere in the body.

3. It was further explained that young people of her age are often beset by problems which they find themselves reluctant to discuss with others, even their parents.

4. This brought forth information that was not only revealing but served to corroborate completely the theory on which diagnosis was finally based.

Recommendations—The chasm which had existed between patient and doctor had now been bridged. The patient expressed a desire to cooperate completely. She was advised to seek the services of a psychiatrist.

3. ***1945. Continued improvement. The contacts have closed, the separation is less, the bone calcification is improved.***

It was quickly explained that (a) there was no stigma about this as it does not suggest that a radical derangement of the mind exists, that (b) many thousands of people are victims of similar emotional tensions, and (c) that the psychiatrist is specially trained to teach the patient to relax and to rid himself of repressions that prey upon the mind and undermine the health. A well-known psychiatrist was recommended and it was our understanding that this patient made five or six visits for observation and treatment.

Restorative Therapy Continued—1. The local manifestations showed steady improvement and the acuteness subsided under clinical treatment.

2. The seriously diseased teeth were extracted.

3. Deep seated periodontal pockets that held no promise of receding to the level of the underlying destroyed, interdental bone tissue were excised and the areas curetted.

4. Irritating restorations were replaced and as stated before the teeth were ground into physiologic occlusion.

---

4. ***1948. The patient has made a complete recovery from her emotional disturbance. As compared with the first full mouth x-ray in 1937 it will be noted that investing bone is improved, the separation is less, the contacts are more firm, and the calcification pattern is better.***

Comments—1. It was of deep interest to observe that during the course of restorative therapy the teeth gradually moved back into normal contact and alinement.

2. An entire change in the emotional attitude of the patient took place.

3. Due credit was expressed by the author for the psychiatrist for his part in the fine results obtained.

4. Recently (1948) after the photographer who took pictures of the gums and teeth had left our office and the history of the case was gone over with the patient, she made a startling confession. She stated that the psychiatrist, on her first visit asked personal and embarrassing questions which only further upset her mentally and she therefore decided not to continue.

5. The patient added that she thought she gained more from our informal and casual conversations than she would have gained by further visits with the psychiatrist.

6. She said also that she had followed suggestions and interested herself in reading books on psychology and psychiatry.

The exact situation is reported for the sake of completeness of the report. But it must be stated immediately that this certainly does not constitute an indictment of psychiatrists. This was only the individual reaction of one patient to one particular psychiatrist. While it points out that we as dental practitioners can be of help to patients afflicted with emotional disturbances connected with oral diseases it is unquestionably the function of the experienced psychiatrist whose work is directed exclusively to that

5. ***Shows the clinical appearance of the tissues in 1948.***

field to deal with abnormalities of the mind.

As in any other branch in the profession of the healing arts different methods of approach and different techniques are employed, each enjoying a share of success. In this particular case the conflict between patient and psychiatrist arose from the method employed. Had this method been less direct, more tactful, and cautious until the time when a closer doctor-patient relationship had been established it is felt certain that the outcome would have been more satisfactory.

Conclusions—The accompanying series of x-rays taken in 1937 at the time of the onset of the acute condition of periodontitis followed by x-ray recordings at two or three year intervals from then to the present time; and finally photographic illustrations made in May, 1948 of the teeth in situ and environing tissues, end the case history of periodontal disease with definite psychosomatic implications treated on this basis. The results, depicted by the accompanying x-ray and photographic recordings, speak for themselves.

30 *North Michigan Avenue.*

The Physiology of Speech

HAROLD WESTLAKE, PH.D., School of Speech, Northwestern University

INTELLECTUAL and cultural aspects of speech are apt to draw attention from the fact that the speaking is basically a biological or vegetative function. The speaker utilizes parts of the body whose life-serving processes are chewing, sucking, swallowing, and breathing, and the speaking activity is an overlaid use of those same activities.

The first vocalizations of infants are probably mass reflexes. The immature nervous system is not capable at that stage of specific control of gross muscles, so many groups of muscles contract at one time as the baby squirms and struggles. When the inner urges are strong, the tension in the muscles, including the fibers in the vocal folds, is intense and crying results from the impinging of the taut vocal folds over the exhaled air stream. When the infants' inner urges are less intense, the muscular tonus in the vocal folds as well as in the limbs is likewise moderate, so that cooing or babbling accompanies less violent flailing of the arms and legs. These vocalizations combined with chewing, sucking, and swallowing motions result in the accidental production of all the sounds which later will be incorporated into speech.

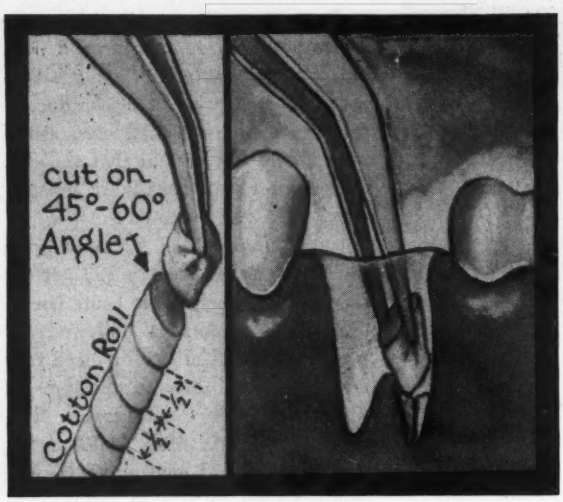
Sound is generated at the glottis and is modified as it passes through the various resonating cavities in the larynx, pharynx, nose, and mouth. changes in the sizes of cavities, the shapes of cavities, the sizes of the openings and numbers of coupled cavities formed, as well as the degree of tension within the cavity walls are responsible for the variations in sounds produced. Postures for particular sounds are similar to positions held during the eating process, and the movements during continuous speech are essentially in the peristaltic sequences noted when food is taken into the mouth, masticated, and carried on to the esophagus. Antiperistaltic as well as peristaltic sequences occur in speaking, although the former predominate.

Vowels are cavity tones, whereas consonants result from valving or constriction of the food tract at particular levels, as the glottis, the velopharyngeal area, the tip of the tongue or the lips. About 85 per cent of the consonants in continuous speech are made by the tip of the tongue articulating with the anterior portion of the hard palate.

Irregularities in tooth arrangements, infected teeth, missing teeth, unhealthy gums, and irregular positioning of the mandible are all hazards to good speech. Because of the high degree of adaptive behavior possible with the tongue, there is not usually a one-to-one cause and effect relationship between a speech defect and a structural condition. Nevertheless, structural adequacy is highly important as a contributing cause, and maintaining a condition favorable to good speech should be an important objective with the dentist.

From *The Proceedings of the Institute of Medicine of Chicago* **17:** 285 286 (March) 1949.

Clinical and Laborator

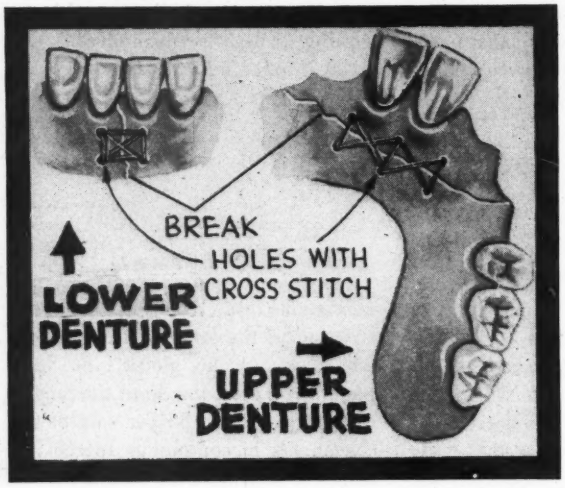


1

An Improved Method of Drying Sockets

Major W. O. Orsinger, (DC) Selma, Alabama

1. Cut cotton rolls, ⅜ to ½ inch in diameter into pieces at an angle of 45 to 60 degrees. Wrap a convenient number in muslin, tie in bundles, and autoclave or sterilize by dry heat. Sponges of this kind are of the proper size and shape to fit into tooth sockets during surgical procedures.

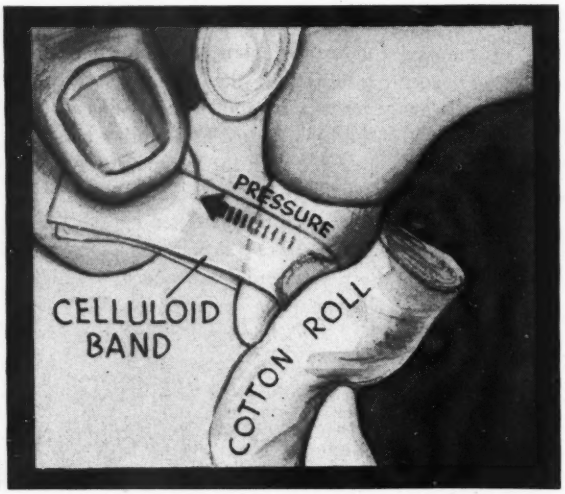


2

Temporary Denture Repair

M. G. Poeltzig, D.D.S., Milwaukee

2. It is frequently necessary to make a temporary denture repair. A simple and economical method is the following: With a #4 round bur drill several holes on each side of the fracture line. Using strong white thread and a needle cross stitch and fasten the broken fragments together.



3

Use of a Cotton Roll in an Anterior Acrylic Restoration

George Goldfarb, D.D.S., Lancaster, N.Y.

3. A better lingual contour in an anterior silicate restoration may be developed by placing a cotton roll over the celluloid strip and having the patient bite.

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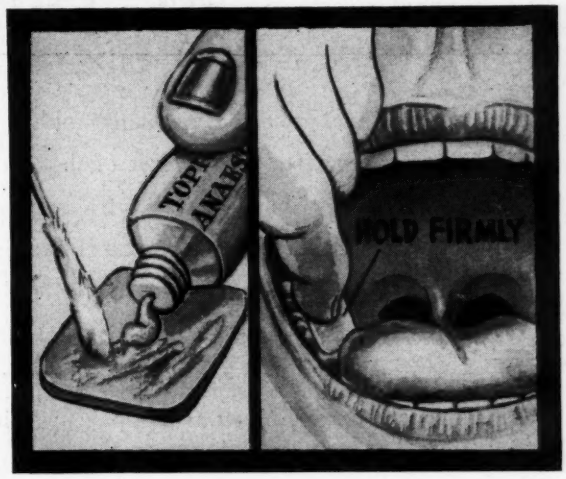
SUGGESTIONS . . .

Preventing the Lower Molar Gagging Reflex

Leonard M. Lechan, D.D.S., Fall River, Mass.

4. For an effective method of preventing the gagging reflex rub a thin coating of any topical anesthetic paste or cream on the tissue side of the film. Hold the film firmly in position.



4

Soldering Block Matrix

H. E. Lager, D.D.S., Virginia, Minn.

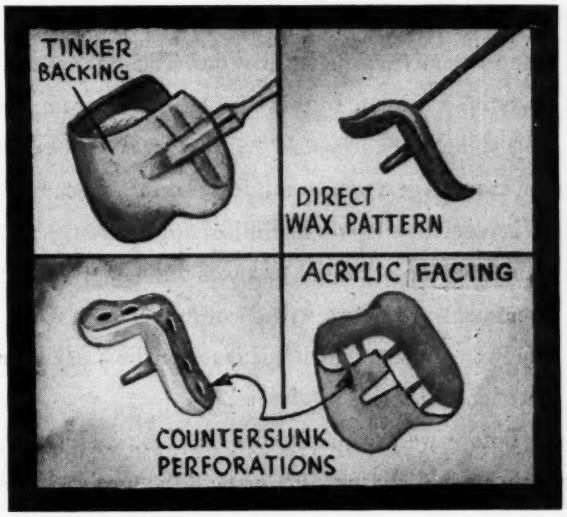
5. To reinforce a charcoal soldering block select an oversized paper box and fill it with a mix of artificial stone. Embed the charcoal block in the stone. When the stone is set remove the paper. This reinforcement will give strength to the soldering block and will make it much cleaner to handle.

5

Replacing a Broken Tinker-Type Facing in Acrylic

Walter C. Harbart, D.D.S., Los Angeles

6. The pin holes are enlarged with a #702 tapered bur. A wax pattern of the bucco-gingival aspect of the backing is made and cast in gold. Using a #1 round bur perforations are made in the casting. The perforations in the surface toward the backing are countersunk. Using the perforated gold casting as a base carve, contour, and process an acrylic facing and cement into position.



6

suitable illustrations; write a brief description of the technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time.

Turn to page 232 for a convenient form to use.

Send your ideas to: Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

The EDITOR'S Page

PAIN IS essentially a protective mechanism although it is difficult to convince the sufferer of that fact. "Pain," says Walter Cannon, "saves us from repeating acts which in the end might make an end to life itself."

Pain from the dental tissues usually originates from morbid chemical changes within the pulp or periodontal membrane. Much of this pain may be prevented by early recognition and treatment of beginning lesions in the dental hard and soft tissues. There is, however, a certain potential pain in the preventive dental surgical procedure. The infliction of this kind of pain is a method of conservation. Pain, associated with operative procedures inflicted here and now, will reduce the quotient of future pain. Few people and certainly no dentist will challenge this philosophy. To adjust the philosophy to life realities, however, is not always easy.

Entirely apart from the anatomic and chemical aspects of pain and its control in dental practice, we must recognize two attitudes on the part of those who experience dental pain. The person who experiences dental pain as an end result of morbid processes in dental tissue usually seeks direct and immediate relief. The speed of his seeking is usually in direct ratio to the intensity of the pain: The more intense the more anxious he is for relief. The other attitude is quite different. In this case he is free from pain but voluntarily accepts a painful or at least an unpleasant experience to minimize future discomfort. Whatever we may do in clinical application to raise the pain threshold and to lower the anxiety for the treatment procedure will encourage people to seek early treatment. This holds true for the early treatment for all forms of disease.

Before we are prepared to evaluate methods of pain control, we must understand the mechanism of pain. After we understand the mechanism it is easier to formulate an intelligent method to make it work to the advantage of human beings. Without a knowledge of the anatomy and chemistry of pain or even, perhaps, the electro-physics of pain our efforts are empirical.

A recent development in operative technique is the use of the water spray in cavity preparation. A fine spray of water is directed at the cutting blade of a dental bur or stone. The water reduces the temperature produced by friction. If temperature and pain fibers are associated in the neural structure of the body, it is understandable why the control of temperature in cavity preparation will reduce pain. There appears, however, to be something more than the control of the thermal response. It is possible that the debris produced in cavity preparation may be an irritant to the dentinal fibrils and if the debris is removed by the water spray, this form of irritation is lessened. From a mechanical standpoint it is easy to imagine that the hard cuttings of tooth structure may be burnished into the sensitive nerve endings during cavity preparation. To make an analogy, it is like rubbing sand in an open wound.

The immediate removal of debris from the operative field is good surgery, good mechanics, and apparently good biology. The water spray instruments are highly effective in the debridement of the dental operative field and in controlling thermal irritation. Any dentist who has not availed himself of one of these instruments is denying his patients and himself.

The water spray is also a form of distraction and its use may create a masking tone that cuts down the unpleasant sounds that are made by operating on hard tissue. The use of the water spray, therefore, is psychologically as well as physiologically sound.

MEDICINE and the Biologic Sciences

Diabetic Coma

Whenever the diabetic takes to his bed or appears to be unwell it is wise to watch him closely. Such precaution may save him a great deal of discomfort and suffering or even death. It is possible for diabetic coma to develop insidiously and often only heroic effort can save the patient.

The term diabetic coma, is by general agreement applied to severe, rapidly progressive, diabetic ketosis. Its diagnostic features are increasing drowsiness and confusion, ending eventually in true coma. There is an increasing hyperpnoea, dilatation of the stomach, and eventually circulatory failure due to electrolyte and water depletion.

The biochemical findings of diabetic coma are characteristic. It is readily induced, even in the controlled diabetic, by acute infections or alimentary tract disturbances. It is not so much a complication of diabetes as the end stage of diabetes and the treatment of coma is the treatment of diabetes—namely, insulin.

The condition is easy to recognize. One essential feature which distinguishes it from other causes of coma is that in diabetic coma "unconsciousness" does not supervene till after a progressive and characteristic illness lasting, as a rule, several days.

It is the insulin which cures diabetic coma. Other measures are necessary but they are not curative. In most cases it is possible to bring about a striking improvement in from three to six hours. Two other measures may be important—gastric aspiration and in some cases the intravenous administration of normal saline.

The chief point in treatment is to ensure, even at the risk of giving more than may be needed, that the patient gets enough insulin within the first three hours. In many cases some infective process is present and this must be treated too.

The longer the patient has been ill and the graver his state, the higher the required dose. It is impossible to know in advance how much will be required. Repeated doses are given and the effect is watched.

If, at the end of the first three hours, a striking change for the better has not taken place, the dosage of insulin must be condemned as grossly inadequate and much more be given. In nearly every case at the end of the first six hours the patient is ready to eat and drink and is asserting himself and his improvement with delight. In elderly or debilitated patients, difficu'ties in the restoration of the water and electrolyte content of the body fluids may arise.

In almost all patients with diabetic coma admitted to the hospital the stomach is dilated and unless this is corrected most of them will die. As soon as the initial dose of insulin has been given the stomach should be aspirated and no water should be allowed the patient for some time.

With cases of marked circulatory collapse it is necessary to give normal saline intravenously. About two to four liters are given during the first few hours.

A high index of suspician on the part of the dentist as well as the relatives of the diabetic patient will often be a factor in saving the life of the person.

Micks, R. H.: Diabetic Coma, Brit. M. J. **2**:200-205 (*July*) 1948.

Malignant Hypertension

The term malignant hypertension is used to designate a syndrome characterized by an onset so violent and a course so rapid that its natural history alone separates it from all the other types of hypertension. The outstanding clinical features of malignant hypertension are the rapidity of its progress, which is measured in months rather than years, and the termination in renal failure.

The condition follows such a characteristic pattern that the clinician can recognize the disease by its natural history, differentiate it from all other types of Bright's disease, and accurately predict its course. There is sufficient evidence to suggest that if the diagnosis is made early the syndrome of malignant hypertension, despite its grim prognosis, is amenable to therapy.

Usually there is a complaint of severe occipital headache, fatiguability, rapid loss of weight (as much as 75 pounds in six months), nocturia with or without frank hematuria, and rapidly progressing impairment of vision. Depending on which vascular bed is affected, there may be any combination of nausea, vomiting, substernal pain, edema and dyspnea which is as often paroxysmal at night as exertional. Episodes of numbness and tingling, transient paralysis, and even convulsions are often present. The symptoms are so striking that the clinician usually can date accurately the onset of the malignant change.

This type of hypertension has no age limitation. The average age is 42 years and the majority of patients are between 33 and 55 years of age. The disease is rarely encountered in subjects over 60 years of age. It appears that in the elderly group the disease runs a less fulminating course.

The laboratory findings of importance are those relating to the estimation of cardiac and renal function. Cardiac enlargement is virtually constant. The transverse diameter averages 22 per cent greater than the predicted normal. As the disease progresses, renal function is invariably

and greatly impaired and proteinuria appears.

Once the diagnosis has been established, the outlook is grim, for few other diseases cause such a rapid dissolution. The treatment is considered a medical emergency. Although some improvement may be anticipated from compensatory hypertrophy and the subsidence of what is at least tantamount to an inflammatory reaction, it is manifestly impossible to effect major reversal of structural alterations already present.

The average patient lives only eight months after the diagnosis is established. Therefore it is clear that the rate of progress of the disease is such that the number of days it has existed may in large measure determine the residual function which will remain after progress of the disease has been arrested.

The initial problem, then, is that of prompt diagnosis coupled with an accurate estimation of the patient's maximal renal and cardiac function. If the process is so far advanced that life is barely supportable, only palliative treatment is possible. If, however, cardiac and renal function are still adequate, the immediate institution of some type of aggressive therapy is mandatory.

There are four possible approaches to such therapy: (1) Irradiation of the pituitary gland has been suggested to suppress the posterior lobe of the pituitary and the resultant eosiniphilia of the anterior lobe.

(2) The use of kidney extract to lower the blood pressure of hypertensive patients is based on the assumption that normal renal tissue contains a clinically effective antipressor substance. The exact mechanism is not clear but this approach merits attention and further study.

(3) Dietary means include the restriction of sodium in the diet and the institution of the rice diet. These serve to make renal function less demanding.

(4) Sympathectomy is recommended as a means to relieve a "neurogenic clamp" and ease hypertension. Since malignant hypertension is a rapidly progressing fatal disease, the conclusive demonstration that life has actually been prolonged is the justification for surgical removal of all or part of the sympathetic nervous system.

At the present time there seems to be sufficient evidence to support the contention that, if careful evaluation of the patient's renal and cardiac function discloses no contraindication, immediate sympathectomy is the treatment of choice.

Birchall, Robert: Malignant Hypertension, Am. Pract. **2**:713-719 (*July*) 1948.

Diphtheria Immunity

An increased incidence of diphtheria in the United States was reported by the United States Public Health Service during the late spring of 1945. This increase continued into 1946.

As a result some authorities are checking the results of immunization procedures of children. It is apparent that no age group is immune to diphtheria today. The disease is no longer considered one of infancy and childhood. If a large per cent of adults are now susceptible it must be assumed that they never have been immunized, or if previously immunized, they have lost their immunity.

In series of tests conducted on junior and senior high school students in certain schools in Pennsylvania, New York, Massachusetts, and California it was revealed that a relatively high percentage of pupils had lost their immunity to diphtheria. Among the junior high school students 20 per cent were Shick-positive and among the senior high school students an average of 18 per cent were positive.

All students with a positive reaction were given a "booster" dose of 0.5 milliliter of alum-precipitated toxoid. There are no untoward reactions from this stimulating dose in young people. A few develop some soreness and redness at the site of injection for a day or two.

Adults do not tolerate the alum-precipitated toxoid well. Therefore, only 0.1 milliliter is administered as a rule. Even from these small dosages reactions are common. Both generalized and localized reactions may be quite severe.

There is some question as to the adequacy of the Shick test as a measure of diphtheria immunity. Yet it is still the most effective measure from the standpoint of ease of administration in any mass testing. It is generally conceded that an individual with 1/250 units or more of antitoxin per milliliter of blood will have a negative Shick test.

The accumulation of statistics from these reports confirm the fact that diphtheria immunity is not a lifelong immunity. Therefore, in order to protect susceptible children as well as adults, booster doses of diphtheria immunizing agents must be used to protect a greater percentage of the general population. This procedure is definitely indicated following any outbreak of diphtheria in a community.

Eichelberger, Eli: How Long Does Immunity to Diphtheria Last? Am. J. Pub. Health **38**:1234-1237 (*September*) 1948.

Anticoagulant Therapy

Anticoagulant treatment has a definite place in the medical and surgical procedures of today. Its field of usefulness is being extended but it must be properly controlled and its dangers must be fully understood.

Dicumarol was discovered to have anticoagulant properties six years ago. Heparin had been used for some time but it was the introduction of dicumarol that made it feasible to reduce the coagulability of the blood for days or weeks if desired. Dicumarol has the advantage of oral administration while heparin must be given intravenously every four or six hours.

It takes 48 hours for the full action of dicumarol to develop. Consequently if an anticoagulant effect is needed quickly it is desirable to give heparin

as well as dicumarol for the first 48 hours.

Some recommend an initial dose of 300 milligrams of dicumarol for the first dose and 200 milligrams on the second day. No more should be given unless the prothrombin is over 20 per cent normal. If it goes above this percentage an additional 200 milligrams is given daily until it falls below that figure.

Success in the control and avoidance of accidents clearly depends on accurate daily estimates of prothrombin. The clinician must work with the clinical pathologist who has a standard technique and who has a graph showing the exact relationship, by his technique of prothrombin time and concentration.

Hemorrhage is a complication which may occur. In 1.8 per cent of the cases hemorrhage of some degree may occur. The risk is small but definite and cannot be avoided completely even under expert control. For serious hemorrhage, synthetic vitamin K is given intravenously at two hour intervals for three doses and blood loss is replaced by transfusion of fresh blood.

Anticoagulant treatment has many applications: 1. In surgery it is used as a preventive measure in operations such as abdominal hysterectomies, which are especially liable to thrombic and embolic complications. 2. In postpartum venous thrombosis in the legs the treatment accelerates recovery, prevents spread, and reduces invalidism. 3. As an emergency measure to prevent spread of venous thrombosis and pulmonary embolism. 4. Some blood vessel diseases such as acute and recurrent thrombophlebitis are benefited by anticoagulant therapy.

At the Mayo Clinic encouraging results have been noted in the use of heparin-dicumarol treatment of acute infarction due to coronary thrombosis. It is too early to evaluate this application properly but it promises to be of considerable value.

Editorial: Anticoagulant Therapy, Internat. M. Digest **53**:247-248 (*October*) 1948.

Epilepsy— Present Concept

Every epileptic patient should have a careful history with the view of determining whether he has the genetic or acquired type of epilepsy. He should have a complete neurologic examination calculated to bring out suggestive evidence of old trauma, tumor, abscess, foreign body, or other type of damage to the brain. His physical status should be closely investigated.

A complete evaluation of all findings is necessary to provide a correct diagnosis. After that diet and medication are ordered and the patient is instructed to avoid acts that would endanger his life were he to have a seizure while so engaged. This should include (1) driving a car or motorcycle, (2) riding horseback, (3) climbing in high places, (4) swimming, (5) working over a fire, or (6) working about moving machinery.

On account of his handicap the problem of the epileptic patient is one that involves not only his malady, but also his social status, his capacity for employment and his personal adjustment. All these problems must be solved in order to serve the epileptic adequately.

The effectiveness of phenobarbital is well established. It does not suffice merely to order ½ grain of phenobarbital three times a day and expect full and complete results from the program. The drug should be timed in such a manner that it fits the situation. That is, its administration should be timed just before the patient is subject to seizures.

Dilantin sodium has acquired a most prominent place as an anticonvulsant. With some patients there are toxic symptoms. These include (1) skin eruptions, (2) gastric discomfort, and (3) incoordination. In younger persons there is often hypertrophy of the gum tissue. The drug is effective against grand mal seizures and particularly against psychomotor attacks, the latter being the type in which amnesia is the predominating symptom.

Tridione is of particular value in the petit mal attacks. It, likewise, is toxic to some persons and should be used with caution.

Consideration of the diet is important. Alkalosis lowers the convulsive threshold. Therefore the ketogenic diet is used. This is particularly effective in children. Food must be weighed and the calories calculated so that ample protein is furnished. The grams of fat must treble the grams of carbohydrate and protein.

Another diet of value to some is the dehydration diet. Fluid intake is about 20 ounces per day. This diet is not popular with patients although it is quite effective in some.

The basis of modern treatment is a complete evaluation of the patient's condition followed by the establishment of a livable routine. Medication and diet are essential parts of such a routine.

Kelley, Ernest: Convulsive Disorders. Modern Concepts, Diagnosis and Treatment, Nebraska M. J. **33**:274-277 (*August*) 1948.

Pharmacology

Pharmacology is the study of the action of chemicals on living things. It is applied chiefly to medicine. Large numbers of new drugs are constantly being introduced into medicine for various purposes. And frequently the clinical use is not satisfactorily established on the basis of demonstrable biologic action.

The main criteria for the choice of a drug for a particular purpose are (1) low toxicity, (2) desired activity, (3) prompt effect, and (4) easily controlled effect. There must be no untoward reactions, even on frequent and repeated administrations. Also the manufacture should be accomplished with as little complication and expense as possible.

In order to be certain of uniformity of chemical response to the same dose of a drug, it is necessary that the drug be standarized. To accomplish

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The use of public names of drugs is important to the professional man. It means much saving in money. A chemical agent sold under a "trade name" may cost ten times as much as the same drug sold under a public name. It is important to know the public names, if available, of proprietary drugs and to use such drugs under public names.

The chief factors modifying drug action are (1) dosage, (2) the ratio of the rate of absorption of the drug through the body to the rate of its destruction or excretion, (3) the physical-chemical properties of the drug, and (4) the individual peculiarities of the particular patient to whom the drug is given.

By dosage is meant mass of chemical per mass of body tissue excluding fat. This suggests the importance of dosage on the basis of milligrams of drug per kilogram of body weight. Many of the newer drugs are being introduced for use in this manner. Drugs with a more general and less toxic action may be given by average dose but for precise application it is wise to work out dosage in terms of milligrams per kilogram.

The mode of administration profoundly modifies the dose effects. This is because the mode of administration has a bearing on the rate of absorption of the drug. 1. Absorption is slowest through the skin. 2. It is next most rapid through the mucous membranes of the alimentary tract. 3. Absorption of gaseous agents across the respiratory mucous membrane is very rapid. 4. Intramuscular injection offers steady absorption for drugs in oil suspension. 5. Subcutaneous injection is not a particularly satisfactory method of administering drugs, but it is used widely. 6. The most rapid distribution is obtained when a drug is given by vein.

Different persons will respond differently to the same amount of the same drug. It is desirable to know the ratio between the dosage which might be expected to produce the desired effect in practically all patients, to the dosage that might produce an untoward reaction in the most sensitive patient.

An important point to keep in mind with respect to drug action is that drugs can only make cells do more or less what they are already capable of doing. No drug can restore the functional activity of a cell so damaged as to be incapable of that function.

Leake, Chauncey D.: Current Pharmacology, J.A.M.A. **138**:730-737 (*November* 6) 1948.

Foreign Bodies in Air and Food Passages

Carelessness of one kind or another is the cause of almost 90 per cent of the cases of foreign bodies in the air and food passages. The most important are: 1. Carelessness in the preparation of food. 2. Carelessness in eating. 3. Carelessness in looking after infants and young children.

It is noted that 80 per cent of patients with foreign bodies in these areas are under 15 years of age. In the older persons artificial dentures contribute in two ways: 1. The dentures may occur as foreign bodies themselves when not properly fitted or adjusted. 2. They are an important etiologic factor in the swallowing of foreign bodies such as bones, chips of china, or other foreign material in the food. Such objects are not detected in the mouth because the patient wears a denture which prevents the foreign body from being felt as it otherwise would be.

Coughing, laughing, crying, vomiting, and fainting are all contributing factors in these accidents. Dental and surgical accidents, the inhalation or swallowing of some dental or surgical material, account for a few incidents of misplaced matter.

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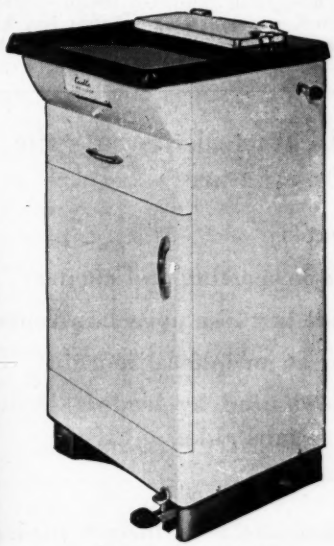

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can be prevented by (a) more care in the preparation of food, (b) instruction of those who have charge of the preparation of food in observation of reasonable precaution, and (c) the exercise of greater caution in mastication by those who wear dentures.

Small children should be trained to keep out of their mouths things which do not belong there. This is easier said than done. However, the adult can avoid setting a bad example before children by putting things in his own mouth. Dentists, and surgeons who work about the mouth, should be careful not to allow small objects to be inhaled or swallowed.

Formerly, surgical intervention was necessary to remove these objects. This carried a mortality rate probably as high as 75 per cent. Today the removal of foreign bodies from the air or food passages is carried out by means of direct laryngoscope, the bronchoscope, or the esophagoscope. The mortality should be less than 1 per cent.

Bones are the commonest objects occurring as foreign bodies. The triangular part of the sternum of the chicken is one of the bones most often found. Coins and buttons are common in children. Occasionally a partial denture must be removed. Other dental objects include teeth, restorations, and crowns. These small objects are generally found in the bronchus, sometimes getting quite far peripherally. When root canal reamers go down into the bronchial tree they generally extend far out into the bronchial tree. They are among the objects that have to be removed with fluoroscopic aid. The initial symptoms of a foreign body accident, regardless of where the foreign body eventually lodges, are choking, gagging, and wheezing. A symptomless interval follows the initial symptoms. This is highly important and should immediately arouse suspicion.

The roentgen ray is the most valuable diagnostic aid whether or not the foreign body is radiopaque.

Jackson, Chevalier: Foreign Bodies in Air and Food Passages, Postgrad. Med. **5**:281-290 (*October*) 1948.

Contra-Angles

Travel is a Headache

I NEVER TAKE a trip that I don't chide myself for leaving home. Before the train or plane gets underway I curse myself for accepting the speaking engagement or the business that ripped me loose from my home comforts. Travel is supposed to make the full man or the well-rounded man. I find, however, that travel maketh the irritated man. Quiet travel to the hills or the seashore, preferably on foot or horseback, would be something else. Leisurely walking like a pilgrim with pack on back, sleeping in the new-mown hay under the clear stars at night and watching the bright sunrise is travel that I can understand but would probably never attempt. I have known sore feet, sharp blades of hay cutting my skin, the chill of dawn. I have had my fill of camping out and even the nostalgia for the days of youth will not prompt me to get back too close to Nature.

Because most of us will not accept the rigors of travel we have made a fetish of swift, super de luxe transportation and accommodations. We pay a lot for this splendor but unfortunately do not get our money's worth. I am thinking, for example, of the so-called private accommodations on trains. There you pay more for a cell for the night than you do for a suite in a first-line hotel. And certainly no one will say that you get too much for your money in a hotel. Two people occupying a bedroom or a compartment on a train for the night are forced to squirm and wiggle to dress and undress, perfect their skill at plumbing manipulations, and sleep on the thin, green corn husk mattresses that the Pullman Company rents for such excessive fees.

To get on board this fancy-named Limited you must pay a handsome tribute to the indolent red cap who carries your luggage on board and who looks at whatever you give him as if it were only half enough even if you give him more than the amount clearly specified on the stubs he hands you. To leave the Limited you pay a ransom to the porter who made your corn husk bed (which had already cost three times more than it should). The porter had also brushed your shoes very lightly in the night, performed a whisk broom ritual in the morning, and carried your luggage to the door where the vultures with the red caps were eagerly waiting when the train stopped. Once again you pay to get your bags to a cab stand and fight for the chance to rent a cab and pay the cabbie an extra portion for his skill in getting you to a hotel.

Although you have had a reservation at the hotel for weeks, the clerk informs you that it was all a mistake

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Furthermore, its astringent, invigorating action will improve the tone and resistance of the tissues to bacterial invasion.
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and that they thought you were another fellow. But if you are real good and patient they will have something for you about 3 P.M.—it is now 9 A.M. You check your bags which, of course, is an extra fee service. At 3 o'clock you return to ask meekly for succor, a roof for your head, a port in the wild storm. The clerk (it may be another on duty now—I have never learned the mysteries of the hours of labor in a hotel although in my youth I wore the resplendent green uniform of a bellman in a swank hotel and was forever coming to work at the wrong time) looks at you with the contempt reserved for interlopers and asks if you want to pay $12.00 or $15.00. You ask what is the difference and he says "Three Dollars." Of course, you meant what do you get for 15 that you don't get for 12, but that's something you never find out.

The man called "Front" steps up and asks if you are expecting any mail, messages sent by carrier pigeon or from Garcia. You say "No" politely and ask to go to your room—the $15.00 one. There you find all the windows nailed shut entrapping the fumes that helped give the former occupant his hang-over. The bellman with a fuss of great efficiency opens windows, snaps switches, and rattles coat hangers. The bed is bare to its white bone, or almost. The thin periosteum of a mattress cover is still intact. The maid has deserted or grown weary in the midst of the chore. The bathroom is without towels or they are saturated with the markings of the former guest who has also left his droppings in the ash trays about the room.

"Will that be all, sir?" says the bellman as he trys a form of telepathy to make you come up with a sizable tip.

Your inner bravery wants you to say "All what? I haven't got anything yet—a bed, towels, soap, even a breath of fresh air." But you don't say anything and hand him the tip which represents payment at the rate of about $5.00 an hour. You know that he has no overhead expense, no training costs, no skill to offer and probably little business with the Collector of Internal Revenue.

While you are awaiting the maid you look around to get caught up with latest hotel literature. You observe that the check-out time is now 3 P.M. Every time they raise the rates they take a few hours off your occupancy time. It will soon be that you will have to pay twice for a full twenty-four-hour occupancy.

The maid finally returns from her trip and completes the covering of the beds. She also adds a few towels and if you are lucky she replenishes the various paper supplies, that is, if you're lucky.

The matter of food in public places is a subject of great and unnecessary expense. To begin with the trip on the train: A 5c bottle of coca cola is 30c, a drink stronger than coke is the better part of a dollar, and an undistinguished dinner for two costs $7.00 or $8.00. In general the cooks on trains do a remarkable job working in such close quarters and under

(*Continued on page* 230)

Yes, the *tenth* reprinting of *"Visual Education in Dentistry"* is ready for you. The total sale of the previous editions is now 90,000; isn't this proof in itself of the value of this series of charts? Any practitioner can use the complete booklet in an ethical manner in his patient-education program. *It portrays vividly the value of periodic dental treatment and the danger of neglect.* The charts were originally designed to explain dentistry to the dental patients—they do just that! No other series has been accepted and used so widely in dental practices.

Here are a few typical comments taken from letters we receive almost daily: "I receive Dental Digest and your 'Visual Education in Dentistry' is a favorite 'show' book of mine"; "I find your 'Visual Education in Dentistry' most valuable. Enclosed find $2.00 for two more copies"; "My copy of 'Visual Education in Dentistry' is well used in the waiting room and also at the chair-side for patient education. The charts are useful in explaining various aspects of dentistry to any patient or group"; "Will you please send me your booklet, 'Visual Education in Dentistry.' The one I have is well worn from use."

Space limitations make further quotations from letters impractical, but we feel that the above few exemplify the high regard of the dental profession for the booklet. It will merit your high regard too once you have had a copy only a few days.

WE REPEAT, the tenth reprinting is a duplicate of the previous booklet with the exception of the one additional four-page two-color chart entitled "The Dangers of Pyorrhea." However, this one chart alone will be of sufficient value to any practitioner who has purchased the previous reprinting, to warrant another investment now. Why not order two copies—one for use at the chair and the other for your reception room? A better investment at small cost could not be made.

the tenth reprinting . . .

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☐ I am not a subscriber. Please enter my name on the subscription list for 8 issues of DENTAL DIGEST and one copy of "Visual Education in Dentistry" for $3.00. My remittance is herewith.

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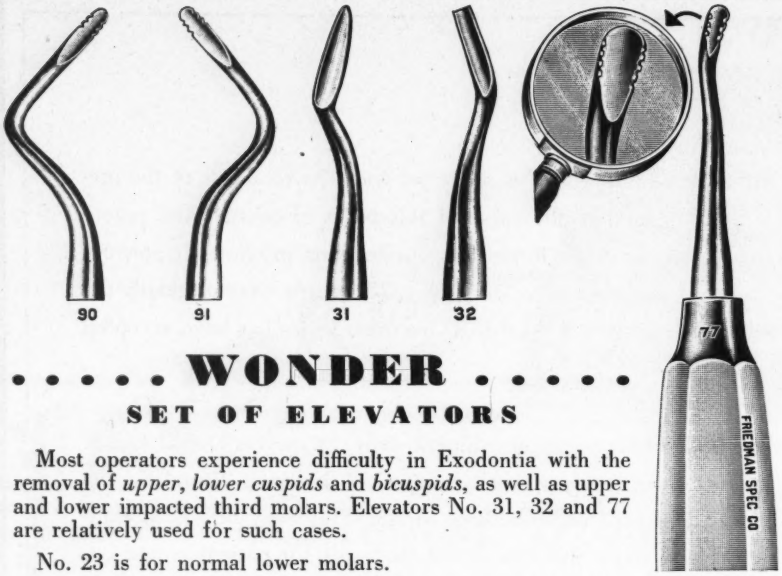

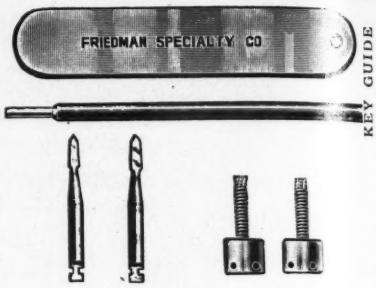

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No. 90 and 91 are for lower deeply broken off roots. The thin blades and serrations separate a root or tooth from its most vital contact when a pendulum movement is applied; the *serrations* which are the most vital factors will engage the tooth or root with the greatest ease ever experienced, because physical force will be minimized.

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Complete set: $4.50

Friedman Specialty Company, 7 South Dearborn Street, Chicago 3, Illinois

(*Continued from page* 226)

constant movement. But even so, bacon and eggs at $1.50 a serving is too much.

Hotel dining rooms are notorious for extras—cover charges and entertainment tax, for example. Most big city hotels operate on the basis that people from out of town won't be happy unless they throw their money away fast so they can return home quickly to talk about the glorified hamburger with the French name that cost $3.00. The night spots, of course, are strictly for the sucker trade and anyone who enters one knows in advance that he is going to be gypped.

The costs and inconveniences of travel are added up in time wasted, tipping at every turn of the palm, paying too much for every service and all food, and the heavy boredom and monotony. Almost every city looks and sounds like every other city—neon signs; automobile horns; plumbing out of kilter, with a specialty on dripping faucets; elegant doormen and suave head waiters with old perspiration lingering on their persons. Traveling means planes grounded or dropping you off at the wrong place and at the wrong time. Traveling means air conditioning that doesn't let air in and train wheels with flat spots on them. Traveling is cold white toast and too many drinks of neutral spirits with brown coloring. Traveling is losing sleep and listening to a lot of people talking about things they know nothing about and making such a fuss over it.

Sorry, I have to go now and pack my bags for another trip!—E.J.R.

Cancer Among Children

A RADICAL change in the relative importance of deaths among children from cancer has taken place. At ages one to fourteen combined, cancer, including leukemia and Hodgkin's disease now is the second ranking cause of death from disease and at ages five to nine leads all other diseases.

A Striking Increase

As recently as 1930 cancer was not even among the first ten causes of death among children, being responsible for only one in every 50 such deaths. In 1946-1947 cancer accounted for one out of every nine deaths from diseases at ages one to fourteen. In the general population of the United States over 2,000 children now die from cancer each year.

The deaths among insured children was 7.1 per 100,000 in 1943-1947, an increase of about 40 per cent since 1930-1934. The rise was slightly greater for boys than for girls—42 per cent and 36 per cent. The death rate among boys is now nearly one-third higher than among girls.

Classifications of Cancer Attacking Children

1. Leukemia is the most common type of fatal cancer in children; the death rate for leukemia has risen sharply. It accounts for nearly one-half of the cancer deaths at ages one to four and for a little more than two-

Candy

MORE THAN JUST FOOD

Although candies are an excellent source of caloric food energy, and supply many valuable nutrients derived from the milk, cream, butter, nuts, peanuts, and eggs used in their manufacture, they provide more than calories and nutrients.

Candies make a worth-while contribution to the joy of living. They are among the foods which provide true gustatory satisfaction. Taken at the end of a meal, they create a sense of having eaten well and are conducive to an aura of satiety which can have a beneficial influence upon the digestive processes.

The child, the housewife, the worker, and the convalescent —all appreciate a piece or two of candy as the finishing touch of the mid-day or evening meal.

THE NUTRITIONAL PLATFORM OF CANDY

1. Candies in general supply high caloric value in small bulk.
2. Sugar supplied by candy requires little digestive effort to yield available energy.
3. Those candies, in the manufacture of which milk, butter, eggs, fruits, nuts, or peanuts are used, to this extent also—
   (a) provide biologically adequate proteins and fats rich in the unsaturated fatty acids;
   (b) present appreciable amounts of the important minerals calcium, phosphorus, and iron;
   (c) contribute the niacin, and the small amounts of thiamine and riboflavin, contained in these ingredients.
4. Candies are of high satiety value; eaten after meals, they contribute to the sense of satisfaction and well-being a meal should bring; eaten in moderation between meals, they stave off hunger.
5. Candy is more than a mere source of nutriment—it is a morale builder, a contribution to the joy of living.
6. Candy is unique among all foods in that it shows relatively less tendency to undergo spoilage, chemical or bacterial.

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(*See pages* 216 *and* 217)

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fifths at ages five to nine. Leukemia accounts for somewhat over one-third of the cancer deaths at ages ten to fourteen years.

2. Cancer of the bladder and kidney now ranks second at ages one to four but declines rapidly in relative importance with advance in age.

3. The outstanding feature in this insurance survey has been the recorded mortality from malignant brain tumors. These are third in the list at the preschool ages but second at the five to nine and ten to fourteen age periods. At five to nine years brain cancer accounts for more than one-fifth of the total mortality from malignant diseases among children.

4. Cancer of the bone features prominently in later childhood.

5. Hodgkin's disease constitutes a relatively unimportant part of the total.

Factors Contributing to a More Hopeful Prognosis

While the situation is not cheerful it is not as hopeless as it looks for the following reasons: 1. Part of the recorded increase in mortality may be spurious; the records reflect more accurate diagnosis which means that cancer is being reported on death certificates in greater numbers than heretofore.

2. An increased proportion of children with cancer are now receiving medical attention in the early stages of the disease.

3. An increasing number of children are surviving five and ten years after treatment.

4. The American Academy of Pediatrics as a part of its national health program has endorsed and coordinated a study of cancer among children by physicians in hospitals.

Aids to Control

1. Parents should be educated to extend health supervision for their children well beyond the period of infancy.

2. A greater readiness on the part of physicians to investigate apparently harmless growths and swellings in children is in order.

3. The main hope for control of cancer lies in basic research on the

fundamental causes of the disease.

4. Such research, coupled with the increasing knowledge of the medical uses of nuclear energy, may ultimately yield new methods of diagnosis to reduce the toll from cancer in childhood.

From *Statistical Bulletin*, Metropolitan Life Insurance Company, 30:5-8 (January) 1949.

Pulpless Teeth*

Edward Coolidge, M.S., D.D.S.

Summary

1. There has always been a search for remedies that will destroy infection and neutralize bacterial products with the least amount of damage to the living tissue cells.

2. The therapeutist should seek to aid nature by removing obstacles from her path but should never hinder her by inflicting an additional burden of tissue damage and necrosis while trying to assist.

3. The most important factor in the use of penicillin is that it can be used freely in contact with periapical tissue with no apparent evidence of irritation or tissue damage.

4. Since sulfanilamide is only effective when in contact with tissue and leukocytes it is not very effective as a remedy to seal into root canals without contact with the periapical tissue.

5. Penicillin is bacteriostatic and bacteriocidal to most microorganisms found in root canals but is shown to be most effective when in contact with rapidly developing infection and should be used in strong solution.

6. The capacity of an anterior root canal has been estimated to be approximately 5,000 units when a suspension of calcium penicillin in oil of 100,000 units per cubic centimeter was used by injection into the canal with a small syringe. This solution retained a bacteriostatic effect for a week at a time in the root canal.

7. A hot sulfanilamide solution has proved helpful where an acute or chronic abscess had drainage through a fistulous tract. In a small number of cases in which penicillin solutions

*Read at 1947 Meeting of Ohio State Dental Association.

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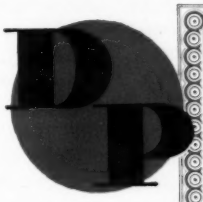

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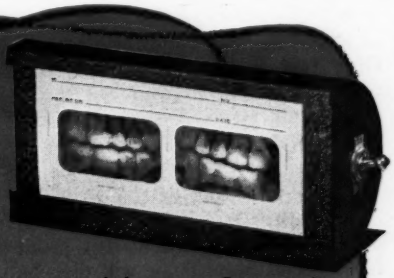

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In your ORAL HYGIENE this month

Facts and Lessons from the British Health Services

We can learn a lot from Britain's experience—if we will! In an article that every American dentist should read, Doctor Nathan Kobrin explains in detail the advantages and disadvantages of practicing dentistry under a national health program.

★ ★ ★

"Let's Look Over Our Offices," suggests Doctor Charles H. Hughes... Our patients do. Right now our women patients are "spring-cleaning" their own homes and they have a keen eye for slovenly housekeeping in the dental office.

★ ★ ★

Did you ever hear of a youngster of eleven months with sixteen teeth? Oral Hygiene presents four dentally-precocious children who can throw away their strained vegetables any time and start on steaks.

★ ★ ★

"What Will Dentists Get from Social Security?"... Will self-employed persons (dentists particularly) profit from Social Security or will they be paying much more than their fair share for questionable benefits? Marjorie Shearon, Ph.D., and Arthur J. Altmeyer argue the question in an article you won't want to miss.

★ ★ ★

Have you ever helped plan a dental meeting? . . . Doctor J. P. Leonard tells what dentists expect from such a meeting—and what they get instead. His article is "must" reading for anyone who is to appear on the program, as well as for program planners.

★ ★ ★

"Dermatitis Caused by Local Anesthetic Solutions" discusses the -caine allergies—one of the hazards of practicing dentistry, and gives dentists sound advice on how to avoid and how to treat such dermatitis. The article is written by Lester Hollander, M.D., Medical Director, Pittsburgh Skin and Cancer Foundation.

★ ★ ★

"Patients—How One Gathers and Holds Them" . . . "Today, the wise man is obliged to leave his tent, seek the busy marts, beat his drums, and blow his horns with a loud 'Hear Ye!,' says Doctor David Tabak . . . and we believe you will agree after reading his article.

★ ★ ★

All of Oral Hygiene's regular departments, too, are ready for your spare-time reading. Some dentists tell us they read the departments before they settle down to reading the articles!

were sealed in root canals on absorbent paper points no distinct advantage was observed.

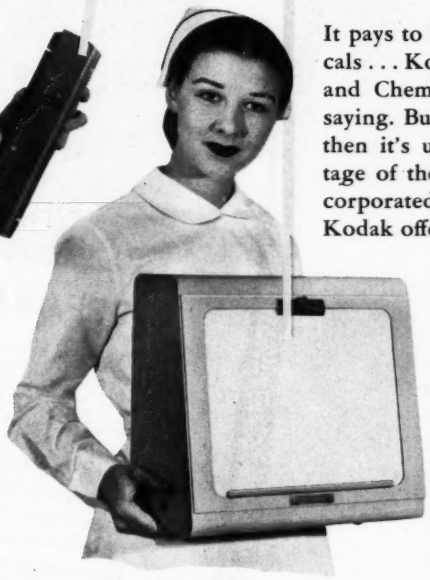
Principles That Should be Recognized

1. Pulpless teeth are not dead teeth.
2. Pulp removal and root canal filling has proved successful in clinical practice and verified by histologic studies.
3. Improved methods of treatment have lowered the percentage of failures and greatly increased the percentage of success.
4. Vital pulps have been shown to possess the mechanism and potentiality of healing and repair.
5. Biologic adaptation of pulp remnants into fibrous and hard tissue after pulp removal and root canal filling has been shown to be nature's method of making successful results where living cells have not been damaged.
6. Periapical tissue becomes involved during pulp inflammation and its degeneration is progressive unless checked by proper treatment.
7. Pulp removal is a surgical treatment and only surgical technique should be employed.
8. Culturing has been shown to be essential to prove canal sterility.
9. Root canal fillings should not pass beyond the dentino-cemental junction but should reach the pulp stump where the vital pulp has been removed and should close the apical foramen where the entire pulp is removed or when the tooth is pulpless.
10. Infection and bacterial products can be eliminated by various methods and different kinds of medication. The thoroughness of the technique is important.
11. Most periapical disturbances can be successfully treated and the inflammatory areas will usually disappear by a regeneration of the periapical bone and periodontal tissue without root resection.
12. Newer antibiotics and germicides seem to reduce the number of treatments required to obtain negative cultures.

From *Journal of the Ohio State Dental Association* **23**:36-37 (February) 1949.

Now... 1... 2... 3... new Kodak assistants for every dentist...

It pays to buy good film and chemicals . . . Kodak Dental X-ray Film and Chemicals. That goes without saying. But once you have them . . . then it's up to you to take advantage of the qualities Kodak has incorporated in them. To help you, Kodak offers these 3 assistants . . .



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Kodak

Case History

Leo S. Seidner, D.D.S.

ONE OF THE early cases that suggested the possibility of a connection between emotional tension and oral pathologic manifestations came to the author's attention in 1930.

History—Upon completion of dental treatment Miss G, a college student, accompanied her parents to a summer resort to spend the remainder of the school vacation. Miss G was unwilling to go because she was reluctant to leave her boy friend with whom she was very much in love.

First Symptoms—Two weeks after departure she wrote stating that her gums felt very sore and bled profusely upon the slightest attempt to brush the teeth. Hydrogen peroxide rinse was recommended and the patient was advised to see a local dentist as soon as possible.

After six weeks Miss G returned and presented herself for attention. Examination showed that although the acute and inflammatory condition of the gingival tissue had subsided there was swelling of the interdental papillae with collapse of the apexes of these tissues.

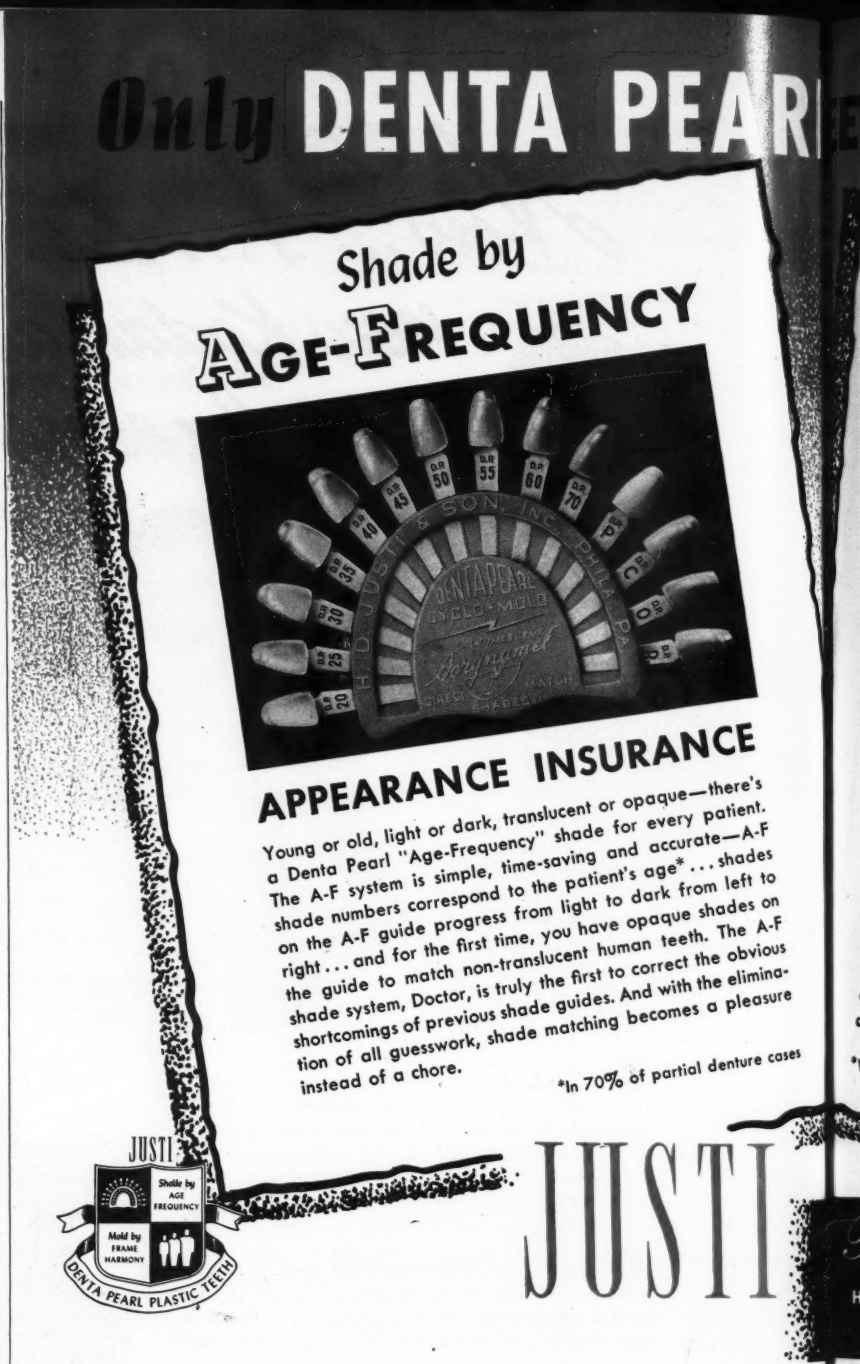
Treatment—1. Thorough prophylaxis was instituted. 2. The affected areas were treated with 20 per cent chromic acid followed by hydrogen peroxide rinse. 3. The patient was instructed to rinse the mouth with equal parts of peroxide and water three times daily.

Recovery—Within three weeks there was complete recovery. The patient was dismissed with the usual instructions on home care. The circumstances described suggested the possibility of an inter-relationship between the emotional state of the patient and the oral pathology.

Recurrence—Three months after dismissal Miss G called for an appointment. The condition of the gingival tissue again made brushing of the teeth almost impossible. Examination showed (1) a recurrence of Vincent's angina, (2) small ulcerative areas of the apexes of interdental papillae and the usual highly inflamed and congested gingival tissues, (3) the patient was tense as previously noted but friendly and cooperative, and (4) it was brought out that she had had a quarrel with her fiance whom she had not seen for two weeks.

Repeated Incidents—Similar incidents described by the patient over a period of years definitely supported the fact that this typical oral manifestation was preceded in every case by (1) a serious misunderstanding between the couple while engaged or (2) after marriage by a violent quarrel followed by an interval of days or weeks when they would not be on speaking terms.

Clinical Observations—What was at first only suspicion later became a conviction that certain forms of oral pathologic conditions involving (a) the soft tissues alone, such as ulcerative gingivitis, or (b) types of periodontoclasia with deep seated purulent alveolar pockets are specific manifestations of emotional disturbance having for its origin sexual tension or libidinal repression.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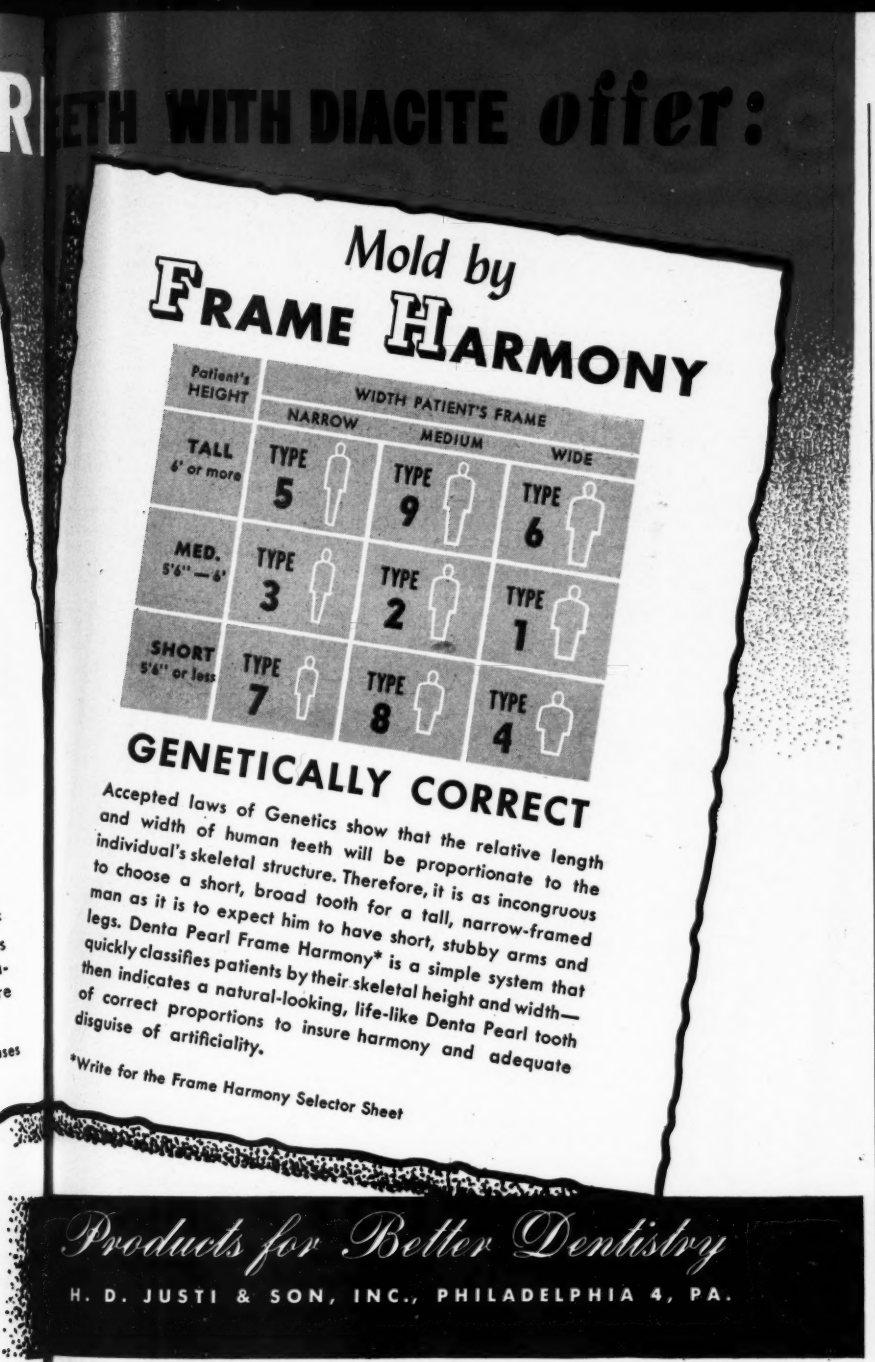
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Conclusions

1. The female appears to be most predominantly prone to this form of oral pathology as the result of emotional disturbance with a background of sexual tension.

2. In the author's experience the ages of susceptibility range between 16 and 30. Patients over 30 years of age suffering from Vincent's infection or a type of periodontal disease involving bone tissue as well were seldom encountered.

3. The exception almost invariably concerns persons revealing a history of frustration as the result of unsatisfactory marriage relations. This is almost consistantly true up to the age of 30.

4. After 30 there is apparently a transference of attack. The Chemical agents of the mouth that previously caused the breakdown of the soft tissues now center upon the hard tissues. This is manifested by dental erosion of varying degrees and designs which often invades the entire coronal portions of the teeth. Its progress depends upon the intensity of the emotional situation forming the background.

30 *North Michigan Avenue.*

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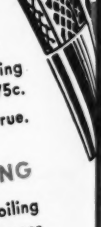

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